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Self reported N. aggression as related to thresholds for aggressive, heterosexual and succorant cues.

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SELF REPORTED N. AGGRESSION AS RELATED TO THRESHOLDS FOR AGGRESSIVE, HETEROSEXUAL AND SUCCORANT CUES

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INTRODUCTION

Bruner and Postman (1947) were the first to observe that different subjects react in a consistently opposite fashion when identifying emotionally charged stimuli. Some of their subjects had significantly higher perceptual thresholds for emotional stimuli than netural stimuli, while other subjects perceived emotional stimuli more quickly than neutral stimuli. These findings were accounted for by the postulation of the concepts of "perceptual defense" and "perceptual sensitization". It was suggested that the perceptual processes have the potential to protect the organism against threatening stimulation. Perceptual defense is seen as similar in function to the ego defense mechanism of "blocking", that is, it keeps anxiety laden stimuli out of awareness for as long as possible. Whereas perceptual defense is seen as a defense whereby threatening stimuli are avoided, perceptual sensitization is seen as a defense which alerts the organism to threatening stimulation. The defense utilized is related both to the nature of the threat and to personality factors within the organism.

Further study in this area has tended to focus on perceptual defense. McGinnies (1949), in a study utilizing

"neutral" and "taboo" words tachistoscopically presented, reported that "without exception, the mean thresholds of the observer were greater for the critical (taboo) than for the neutral stimulus words". Howes and Solomon (1950) criticized McGinnies' conclusions on two fronts. First, it was suggested that taboo words should be expected to yield higher thresholds than neutral words because of their lower frequency of use. Second, it was suggested that it might be the verbal response which is suppressed rather than the perception itself. McGinnies and Sherman (1952), in response to these criticisms, used the Thorndike-Loge semantic frequency lists to find taboo words with similar frequencies to neutral words. A further refinement was the measurement of perceptual thresholds to "neutral" words which had been paired with "taboo" words. Their findings seemed to demonstrate perceptual defense generalization. Subjects defended against the neutral words associated with the taboo words, a phenomenon difficult to explain on the basis of response suppression.

This basic controversy, however, has continued. Whittaker, Gilchrist and Fischer (1952) found their most striking result to be the heightened perceptual thresholds of Negro subjects when tested by a Negro experimenter on the stimulus word "nigger". Because apparent perceptual performance changed as a function of the race of the experimenter, they concluded that response suppression appeared

to be the significant variable. Mathews and Wertheimer (1958), in an attempt to get a "pure" measure of perceptual defense, presented their subjects with an eight word list before beginning the tachistoscopic presentation. Subjects were told that each of these words would be flashed at some point in the experiment. In fact, however, only two neutral and two emotional words were used, thereby allowing a "pure" measure of response suppression on the two words in each category which were not used. One of their experimental groups was reported as having manifested a perceptual defense effect over and above their response suppression factor. The failure of their second experimental group to perform similarly, however, places their results in some doubt.

More recent work with emotionally charged words has, for the most part, resulted in evidence favoring a response bias hypothesis. Zajonc (1962) reported recognition thresholds to be a function not of what the person saw but rather what he said. When subjects were asked to identify a word by responding with one previously paired with it, no perceptual effects of any significance were noted. Goldstein (1962), utilizing a similar technique, reported similar findings. He presented a list of emotional and neutral words to his subjects who were told to identify each of them as they appeared tachistoscopically. Some of the subjects did, in fact, receive such presentations.

Other subjects, however, were unaware of the fact that they were identifying mere hash-marks. The results indicated that the presence of a discriminable stimulus did not produce a perceptual defense effect greater than would be expected by response bias alone. In a follow up study, Goldstein, Himmelfarb and Feder (1962) used a forced choice identification task. Subjects were asked to identify only the spacial position of the stimulus word which was told to them prior to each trial. With the response bias variable thus eliminated, no perceptual defense effect was observed. The response bias hypothesis is also supported, indirectly, by an earlier study. Postman, Bronson and Groper (1953) found that subjects informed as to the taboo nature of some of the words had significantly lower thresholds to these words than did subjects not so informed. It is reasonable to assume that the informed group would be more comfortable responding with taboo words than would the uninformed group who were less certain as to the appropriateness of such responses. The results were interpreted as failing to provide any support for a mechanism of perceptual defense.

In considering the results from the experiments cited above, one must take into account the fact that giving the subject a stimulus list prior to the perceptual task introduces a confounding "set" variable, which may offset "pure" perceptual defense and perceptual sensitization effects.

It seems apparent that the great majority of studies in the area of perceptual defense suffer from the perseverative use of "taboo" words as emotional stimuli. Few researchers have come to the rather obvious conclusion that perceptual factors are best explored if the verbalizations required of subjects are not in themselves "taboo". The word "penis" often causes enxiety when it must be verbalized, especially if the experimenter is a member of the opposite sex. Under certain conditions it is quite probable that the anxiety induced by the verbalization is greater than that induced by the perception itself. A line drawing of a man punching another man might induce anxiety upon its recognition by a subject with a strong fear of aggression. The verbalization of such a scene, however, would in itself violate no social mores, nor would it prove embarrassing for the speaker or the one spoken to, except under highly unusual circumstances.

The use of words is also more conductive to guessing than is the use of pictures. Individual letters can provide partial cues which are especially informative if a "set" for the stimulus words has already been introduced. This is much less a problem with complex pictures, especially when only one or two of a kind are used. "Set" effects are far more likely to emerge where many stimuli in a class are employed.

Perceptual Defense as Related to Personality Factors

Some of the most convincing evidence in support of perceptual defense and perceptual sensitization is provided by studies relating threshold differences to personality variables. Eriksen (1951a) investigated the effect of unacceptable needs on the perceptual recognition thresholds for need related stimuli. Subjects were rated on the degree to which needs in the areas of aggression, succorance and homosexuality were unacceptable. These ratings were determined from the performance of each subject on a word association test. Pictorial stimuli were used to obtain measures of perceptual threshold. The results provided a significant positive relationship between disturbance scores on the word association test and the degree of perceptual threshold elevation for the corresponding need scene. In a second study, Eriksen (1951b) measured perceptual thresholds to eight drawings presented tachistoscopically. In another phase of the study Thematic Apperception Test cards were used to elicit stories from each subject. The results indicated that where sensitization occurred to aggressive stimuli the TAT record was characterized by stories which were openly aggressive in content. In those cases where defense to aggressive stimuli occurred, the TAT stories seldom contained aggressive themes. These subjects, when faced with TAT cards suggestive of aggression, created stories characterized by

blocking, inaccurate interpretation and incoherency. Shannon (1962) classified psychotic patients as characterized by one of three clinical defense patterns: "externalization", "internalization", or "acting out". These classifications were based on the consensus judgment of members of the hospital staff. To some extent, perceptual performance on conflict related stimuli was found to be consistent with patterns of clinical defense.

Statement of the Problem

The purpose of this study is to investigate the relationship between a subject's defensive pattern on a perceptual recognition task and the needs he reports on a self-report personality inventory. The need chosen for study is need-aggression (n. Aggression), as evaluated by the Edwards Personal Preference Schedule (EPPS) (1959). The expected relationship between self-reported n. Aggression and perceptual recognition thresholds is as follows:

I. High self-reported n. Aggression is associated with relatively low recognition thresholds for aggressive stimuli.

II. Low self-reported n. Aggression is associated with relatively elevated recognition thresholds for aggressive stimuli.

III. High self-reported n. Aggression is associated with relatively low thresholds to non-aggressive emotional stimuli, but not to the same extent as to aggressive stimuli.

IV. Low self-reported n. Aggression is associated with relatively elevated thresholds to non-aggressive emotional stimuli, but not to the same extent as to aggressive stimuli.

Hypotheses III and IV are based on the belief that defensive patterns are to some extent pervasive within the individual, and that those accepting of aggressive needs will, in general, be more accepting of other strong needs.

V. Female subjects manifest mean thresholds which are higher than those of male subjects on aggressive and heterosexual stimuli.

VI. Male subjects manifest mean thresholds which are higher than those of female subjects on succorant stimuli.

Hypotheses V and VI are based on the differential social acceptability of sex, hostility and dependency for males and females.

METHOD

Subjects Thirty Ss, fifteen of each sex, were selected from a group of 100 male and 100 female introductory psychology students at the University of Massachusetts. Selection was based on n. Aggression scores as measured by the EPPS.

Within each sex group, five Ss were selected who were of low, medium (control), and high n. Aggression. The following table lists the standardized EPPS percentiles for male and female college populations corresponding to the raw scores for Ss in each group.

	Group	Percentile	
		Range	Mean
Males	High	84-98	89.2
	Medium	45-72	58.4
	Low	17-40	27.4
Females	High	84-98	91.0
	Medium	44-66	54.2
	Low	9-21	13.4

Ss in the low, medium, and high percentile groups were among the lowest, mid-most, and highest 18% respectively, of the populations from which they were chosen. The high

and low experimental groups had to be chosen from the top and bottom 18% because of the unavailability of a number of Ss tested on the EPPS. Had all Ss been available, the top and bottom 5% would have been used, but a one semester delay following the administration of the EPPS caused a high percentage of S loss.

Stimulus materials Thirty-one two-inch square slides were used as stimuli for the perceptual recognition task. Each of these slides were line drawings on a transparent glass. Six judges (three clinical psychology graduate students and three members of the University of Massachusetts Psychology Department) classified these stimuli into four main categories. Thirteen slides were classified as "neutral", or "non-emotional" in content. Six slides were classified as depicting succorant scenes, six as depicting heterosexual scenes, and six as depicting aggressive scenes. These eighteen slides were classified as emotional in content. Within each emotional category the judges sub-categorized two slides each into three levels of emotional intensity. Two slides were judged as highly aggressive in content, two slides as moderately aggressive in content, and two slides low in aggressive content. Similar dimensions were determined within the six succorant and the six heterosexual stimuli. Pilot studies suggested a recategorization of some of the stimuli to maintain groupings which

would be functionally similar. Succorance stimuli were divided into two sub-categories, each containing three stimuli. Three stimuli were classified on the basis of depicting infant scenes and three on the basis of depicting child scenes. Heterosexual stimuli were also dichotomized. Three stimuli were classified on the basis of depicting romantic scenes and three on the basis of depicting sexual scenes. The pilot studies supported the meaningfulness of the original sub-categorization of aggressive stimuli. Results from these studies were also used to select the six neutral stimuli which were used as critical-stimuli and the seven neutral stimuli which were used as warm-up and buffer stimuli.

Each stimulus was a line drawing of one or more human or animal figures, and contained some background detail. The emotional stimuli depicted figures in need-relevant acts. The neutral stimuli depicted figures either as stationary or engaged in acts which were judged as not need-relevant. The following table gives a brief description of the critical stimuli.

Emotional Stimuli

Aggressive stimuli

Low aggressive - 1) Two bears poised for combat.
2) A man shaking his fist at another man in the distance.

Med. aggressive - 1) One man punching another in the face.
2) Two bucks engaged in fierce combat.

High aggressive - 1) One man with a knife standing over a second man who has fallen and is bleeding. (#24)
2) One man strangling another. (#25)

Heterosexual stimuli

Romance - 1) A man and woman walking together. (#14)
2) A buck and a doe looking at each other. (#15)
3) A man standing with his arm around a woman. (#16)

Sexual - 1) A man and woman embracing in bed. (#19)
2) A man kissing a woman. (#17)
3) A man and woman in bathing suits, kissing and embraced in a suggestive manner. (#18)

Succorant stimuli

Infant - 1) A woman holding an infant in her arms. (#28)
2) A bitch suckling her litter. (#30)
3) A woman bottle feeding an infant. (#21)

Child - 1) A woman reading to a child. (#26)
2) A bear walking with a cub. (#27)
3) A woman feeding a child. (#29)

Neutral Stimuli

1) A cat. (#5)
2) A dog. (#6)
3) An ostrich. (#7)
4) A penguin. (#8)
5) A man skiing. (#13)
6) Two rabbits. (#9)

Apparatus A modified Kodak-Carousel slide projector was used to project the stimulus slides on a standard 40. in. x 40 in. screen. The projector was modified so that slides were initially presented on the screen completely out of focus and gradually approached full clarity over a 34 second

time period. The projector was further modified so that S could turn off the slide at any time during the 34 second period by releasing a telegraph key. When the key was not released before, the picture automatically turned itself off after reaching full clarity.

A Grass polygraph DC driver-amplifier model 5E was used to measure Galvanic Skin Responses (GSR), monitored during the entire experimental procedure. The telegraph key, used by the S to operate the projector, was connected to the polygraph, which recorded time to recognition on the polygraph paper. (The GSR data will be analyzed at a future date and are not presented in this paper.)

Procedure The Edwards Personal Preference Schedule (EPPS) was administered a month to a month and a half prior to the experiment. At that time Ss were informed that they might be asked to participate in an experiment at a later date. The EPPS was administered by an undergraduate psychology major who gave no indication of what kind of experiment would be related to its administration. The students taking the EPPS were all part of a pool from which Ss were chosen for many different experiments. Upon contact by the present experimenter, Ss had no way of knowing that the present study was related to the EPPS.

Ss were tested individually on the perceptual recognition task. The S was seated in a comfortable arm chair

facing the screen which was seven feet in front of him. To the right of the chair stood a wooden table upon which the projector rested. The experimenter (E) was seated behind the table, out of S's line of sight. The polygraph stood to E's right, also out of S's line of sight. The telegraph key was placed on the right or left arm of the chair, depending on the arm dominance of S. The key was always manipulated by S's dominant hand. Prior to the perceptual task two small silver electrodes, coated with electrode paste, were taped on S's non-dominant hand. One electrode was taped on the index finger, the other on the long finger. Upon fixing the electrodes in place Ss were told that they would feel no discomfort from these electrodes. Ss were then read the following instructions:

> This is an experiment in perception. When I ask you to "press", please press down on the button located to your left (or right). This illuminates a picture you will see on the screen. With the length of time that you hold down this button, the focusing of the picture will become clearer. The object is to see the picture as accurately and as quickly as possible. As soon as you think you know what the picture is, release the button. A few seconds later I will ask you to describe the picture. Please do not say anything until I ask you to, as this will disrupt the apparatus. Please try to be as concise as possible in your descriptions. Note the figures in the pictures and their actions as well. Also, during the experiment try to rest quietly and do not move abruptly, as this also will tend to disrupt the apparatus. Are there any questions?

The order of stimulus presentation was randomly determined for each S. Randomization was achieved by using a

table of random numbers to determine the position of each stimulus in the slide magazine. The time between stimulus presentations varied considerably, both between and within Ss. Two factors determined the inter-trial interval. First, the length of S's verbal description of a given stimulus varied. Second, a new stimulus was not presented until such time as S's GSR returned to a relatively normal state following its reaction during S's verbal description of the preceding slide. Rarely was the inter-trial interval longer than 30 seconds. Usually the interval was between seven and ten seconds, and never less than five seconds. The time between S's indication that he was ready to identify the picture, and E's request that he do so also varied. E waited at least five seconds before requesting a description of the stimulus. This request was not made until S's perceptual GSR returned to a relatively normal level.

Ss were given no information as to the correct or incorrect nature of their identifications. If a slide was incorrectly identified, it was, unbeknownst to S, placed in the slide magazine behind all stimuli not yet presented, as well as those already presented but misperceived. After all slides had been presented once, all stimuli incorrectly identified were presented a second time. Prior to this second presentation, Ss were instructed to "please look a little more carefully". No stimulus was presented more than twice even if it was not correctly identified the

second time. If, on any trial, S's response was accurate but did not include all information required for a correct identification, E solicited information until he either received the necessary information or determined that such information was not forthcoming. Perceptual threshold, in time units, was recorded automatically on the polygraph paper.

RESULTS

Scoring procedure A response was scored as correct if the S accurately reported the figures in the picture and the actions of these figures, if any. An accurate description of the figures always required the number of figures and the species of each animal figure. Human figures in nearly all cases had to be identified as to their sex and their general level of maturity. The correct identification of an infant, however, sufficed, without reference to its sex. In most cases, the species of an animal sufficed, though several need relevant animal pictures demanded sexual identification and/or identification of an animal's general maturity level. (For exact criteria, see Appendix.)

Threshold determination Time to correct perception was measured in millimeters of paper chart movement (five mm./second). When a S correctly identified a stimulus on the first presentation, a threshold value equal to the time in millimeters from stimulus onset to stimulus offset was recorded. If a S failed to correctly identify a stimulus on its initial presentation but correctly identified it on

the second presentation, the higher threshold value of the two trials was entered as his threshold for that stimulus. If a S failed on both of these presentations and his highest threshold value was maximal (170mm.), a threshold of 180mm. was entered as his threshold for that stimulus. If a S failed on both presentations and his highest threshold value was less than 170mm., the threshold value entered for that stimulus was half-way between 180mm. and the highest threshold value attained on that stimulus. The value of 180mm. was arbitrarily chosen so as to enter higher threshold values for misperceptions of stimuli at full clarity, than for correct perceptions of stimuli at full clarity. Threshold values used in the data analysis were converted into T-scores (standard scores with $\bar{X}$=50). T-score values were determined for each millimeter threshold value on each stimulus. The S population used, for these determinations, included the 10 central Ss (medium need-aggression) from this study, and 20 central Ss from another study. These 20 control Ss were selected on the basis of medium level need-scores on the EPPS. Of these Ss, 10 scored in the medium (40-60 percentile) range on the EPPS need-succorance scale. The other 10 Ss scored in the medium range on the EPPS need heterosexuality scale.

Tests of the hypotheses An analysis of variance was performed on threshold values as a function of the three

experimental groups and the four qualitative classifications of stimuli (see Table 1). There is a significant effect for the sex of the Ss on the pooled stimuli. Males had lower thresholds across stimuli attaining a mean threshold of 49.4 as compared to 56.4 for the females. Female Ss had higher mean thresholds for neutral stimuli as well as for the pooled stimuli within each of the need areas (see Table 2).

The presence of a significant C effect simply indicates that the four classes of stimuli differed from each other. Aggressive and succorant stimuli were, on the average, perceived with the greatest rapidity. Sexual stimuli were perceived somewhat more slowly, and neutral stimuli were perceived more slowly than any other stimulus group (see Table 3).

The presence of a significant AC interaction indicates that the differential reaction to stimulus categories varies among the three experimental groups. The interaction is plotted in Figure 1. As predicted, the high need group manifested recognition thresholds to aggressive stimuli which were lower than their thresholds for neutral stimuli and for emotional stimuli in need areas other than aggression. This phenomenon can be observed when looking at the data from male and female Ss taken together or separately. The low-need group did not, however, manifest thresholds for aggressive stimuli which were higher than

Table 1

Analysis of Variance for Thresholds on Neutral and Emotional Stimuli

Source of Variance	df	Ss	Ms	F
Total	719	114,693.30		
Between Ss	29	56,930.50		
A (Level of EPPS Need Agression)	2	1,443.40	721.70	---
B (Sex of Ss)	1	8,687.60	8,687.60	4.95*
AB	2	4,699.50	2,349.75	1.34
Ss/AB	24	42,100.00	1,754.17	
Within Ss	690	57,762.80		
C (Stimulus/Category)	3	1,253.50	417.83	4.72**
D/C (Stimulus/Category)	20	4,298.70	214.93	2.43**
AC	6	1,237.90	206.31	2.33*
BC	3	121.80	40.60	---
ABC	6	486.70	81.11	---
Ss x C/AB	72	6,368.40	88.45	
AD/C	40	3,671.50	91.79	1.27
BD/C	20	1,969.10	98.45	1.36
ABD/C	40	3,641.20	91.03	1.26
Ss x D/C/AB	480	34,714.00	72.32	

*P < .05 **P < .005 ---F < 1.00

Table 2

Mean Perceptual Thresholds of Male and Female Ss

	Stimulus Type								$\bar{X}$	
	Neutral		Heterosexual		Aggression		Succorance			
	M	F	M	F	M	F	M	F	M	F
High n. Aggressive Group	49.1	58.9	47.0	55.9	42.2	54.0	47.2	54.7	46.4	55.9
Medium n. Aggressive Group	53.1	52.4	52.3	54.4	53.9	51.3	52.9	53.5	53.0	52.9
Low n. Aggressive Group	52.5	63.5	48.4	61.7	50.2	58.4	44.2	58.0	48.8	60.4
$\bar{X}$	51.6	58.2	49.2	57.3	48.8	54.6	48.1	55.4	49.4	56.4

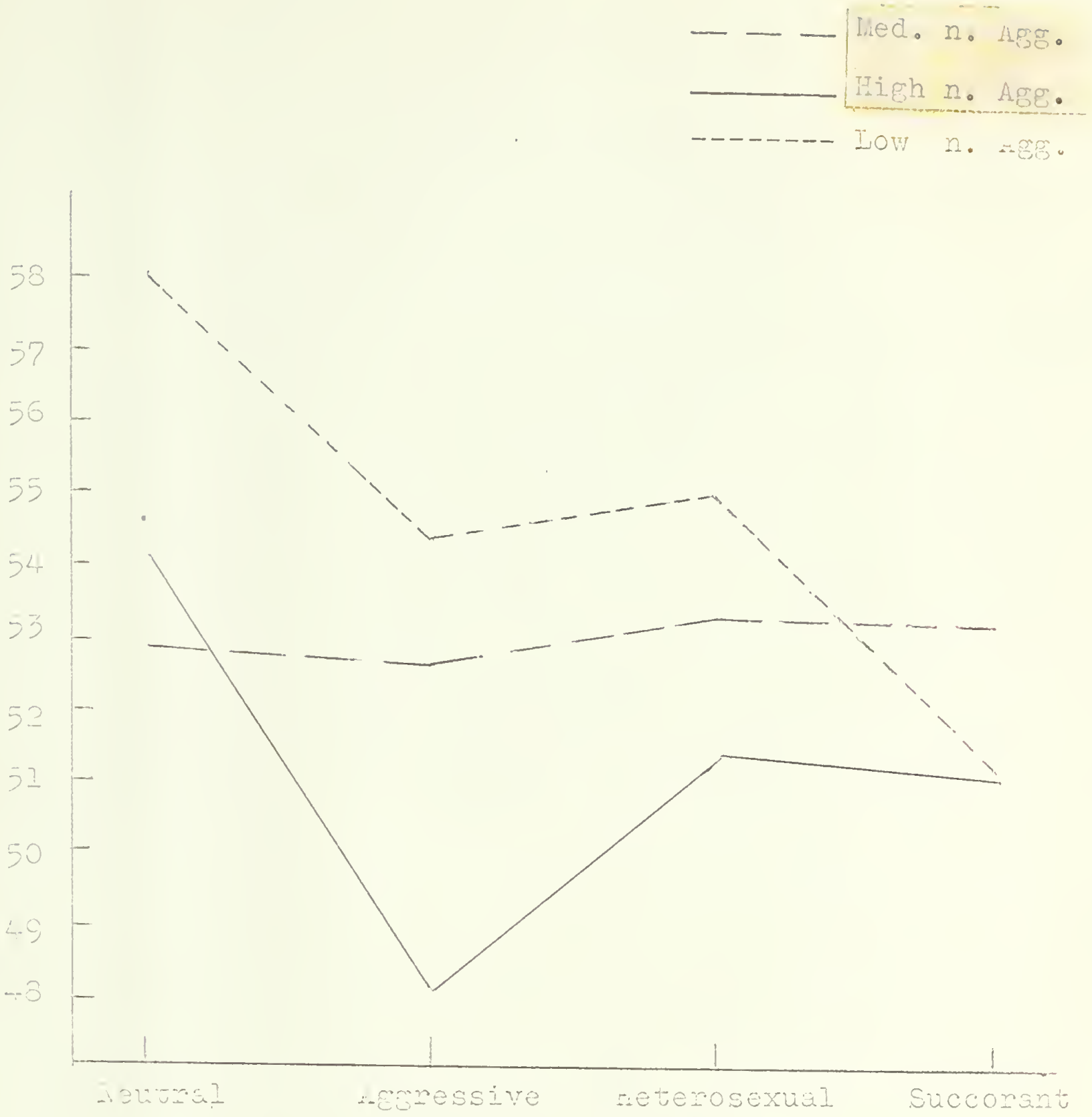

Fig. 1. Mean thresholds to four categories of stimuli as a function of n. Aggression.

Table 3
Mean Thresholds to four Stimulus Classes by High, Medium and Low Aggressive Ss

n. Agg.	Neutral	Aggressive	Heterosex.	Succ.
High	54.0	48.1	51.4	51.0
Medium	52.8	52.6	53.3	53.2
Low	58.0	54.3	55.1	51.1
$\bar{X}$	54.9	51.7	53.3	51.8

their thresholds for neutral or heterosexual stimuli. Instead, they attained thresholds for aggressive stimuli which were lower than their thresholds for neutral and heterosexual stimuli and higher than their thresholds for succorant stimuli.

Both high and low aggressive Ss manifested lower thresholds to non-aggressive emotional stimuli than to neutral stimuli. Control Ss (medium need-aggression Ss) reacted with similar thresholds to all stimulus groups. The flatness of their gradient is extraordinary, the range of mean thresholds being 52.6-53.3. Table 4 gives the mean EPPS percentile scores for each need group on each relevant EPPS need scale.

Table 4

Mean Edwards Personal Preference Schedule Percentile Scores

	EPPS Need Percentiles		
	n.agg.	n.het.sex.	n.succ.
High need agg. Ss	90.1	37.1	51.7
Medium need agg. Ss	56.3	58.1	58.1
Low need agg. Ss	20.4	51.9	61.4

Stimulus dimension ~~within need areas~~ (for v Aggression) An analysis of variance was performed to determine the effect of stimulus

intensity levels within the category of aggressive stimuli (see Table 1, 2, Figure 1, Appendix). This analysis compared the thresholds of each experimental S group for the two stimuli originally designated as low aggressive, the two stimuli originally designated as medium aggressive and the two stimuli originally designated as high aggressive (see page 11 for original stimulus classifications). Observation of the data indicated that the stimuli originally designated as medium aggressive and high aggressive were functionally similar. An analysis of variance was therefore performed to determine if the effect due to stimulus intensity level found in the original analysis would remain significant if the low aggressive stimuli were not included. The analysis was simplified by collapsing over the sex of S and over stimuli within intensity levels. The results (see Table 3, Appendix) indicate that there is no significant difference in the effect of aggressive stimuli originally judged as moderately intense and those originally judged as highly intense.

The data were therefore replotted as in Figure 2. C2 now represents mean perceptual thresholds to four stimuli, the two stimuli previously designated as high aggressive and the two stimuli previously designated as medium aggressive. C2 now represents the two stimuli previously designated as low aggressive. C1 now represents mean perceptual thresholds to the six critical "neutral" stimuli. C2 stimuli are

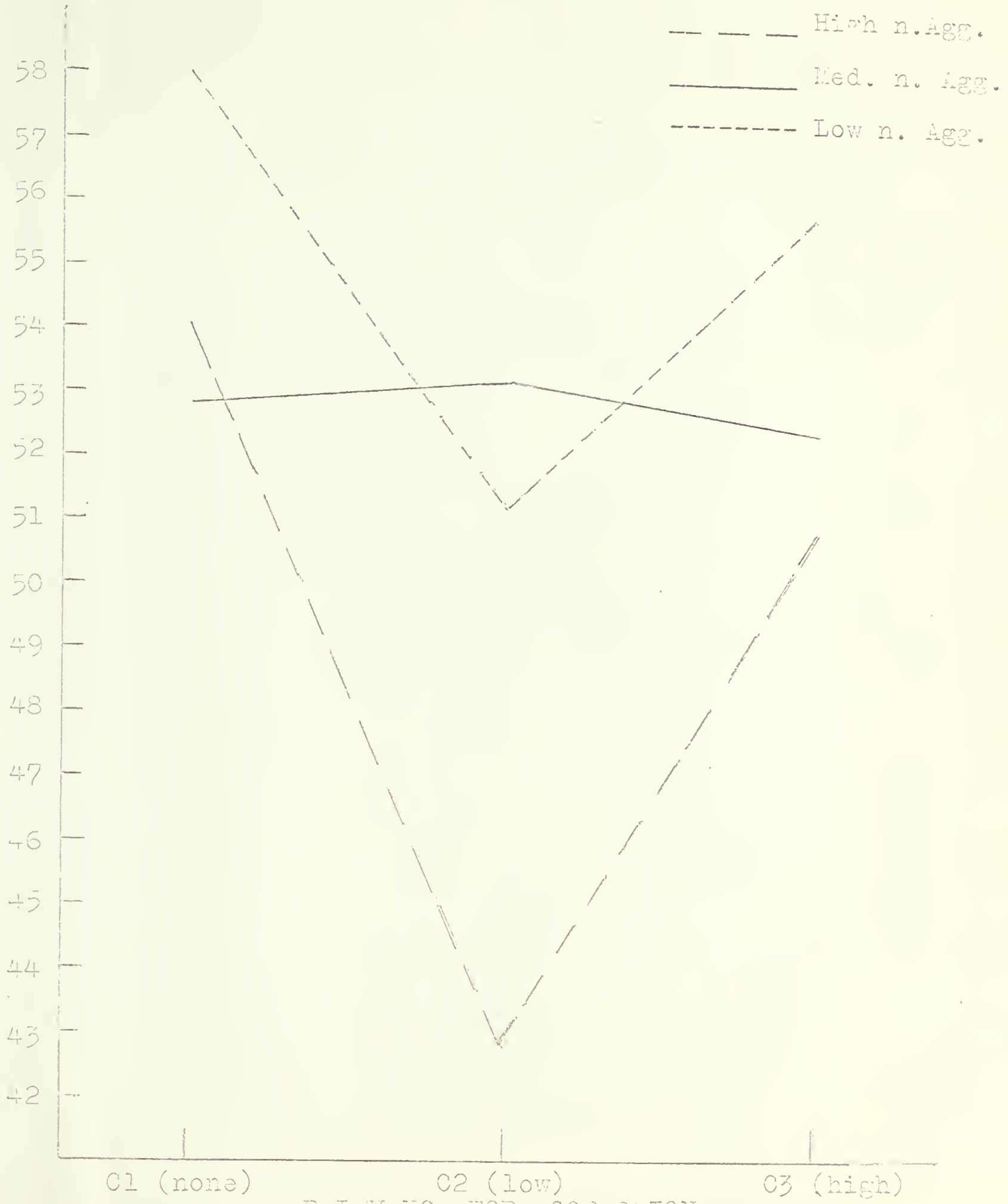

Fig. 2. Mean thresholds to neutral, low aggressive and high aggressive stimuli as a function of n. Agg.

		Stimulus Relevance for Aggression		
		C1 (none)	C2 (low)	C3 (high)
n. Agg.	High	54.0	42.8	50.8
	Med.	52.8	53.2	52.4
	Low	58.0	51.3	55.8

considered to have low relevance to need-aggression, and C3 stimuli are considered to have high relevance to need-aggression. An analysis of variance for data based on stimuli collapsed within sub-classifications was performed on the mean perceptual thresholds of need groups for each of the newly designated stimulus groupings (see Table 5). The results of this analysis indicated sex of Ss, stimulus intensity level, and the interaction between need groups and stimulus intensity levels are significant sources of variance. The interaction between sex, need level, and stimulus intensity was also significant.

The results indicate a tendency for both high and low need Ss to manifest relatively low perceptual thresholds for stimuli of low need relevance. Control Ss did not manifest notable changes as a function of need relevance. The significant second order interaction indicates that the first order interaction between need level of Ss and stimulus intensity level differs between males and females. Observation of the data (Figure 3) indicates that this difference is largely a function of the much lower thresholds of males than females for low aggressive stimuli. The mean differences for neutral minus low aggressive stimuli for males and females respectively were 16.3 and 6.1. Performance on individual aggressive stimuli as a function of n. Aggression and sex of Ss is presented in the Appendix.

Table 5

Analysis of Variance on Six Critical Neutral Stimuli, Two Low Aggressive Stimuli and Four High Aggressive Stimuli

Source of Variance	df	Ss	Ms	F
Total	89	11,636.17		
Between Ss	29	9,406.37		
A (Level of EPPS Need Aggression)	2	702.13	351.07	1.38
B (Sex of Ss)	1	1,407.38	1,407.38	5.50*
AB	2	1,171.61	585.81	2.29
Ss/AB	24	6,125.25	255.22	
Within Ss	60	2,229.80		
C (Level of Stimulus Relevance)	2	270.75	135.38	5.02**
AC	4	280.82	70.21	2.60*
BC	2	43.80	21.90	<1.00
ABC	4	339.03	84.76	3.10*
C x Ss/AB	48	1,295.40	26.99	

*P < .05 **P < .025

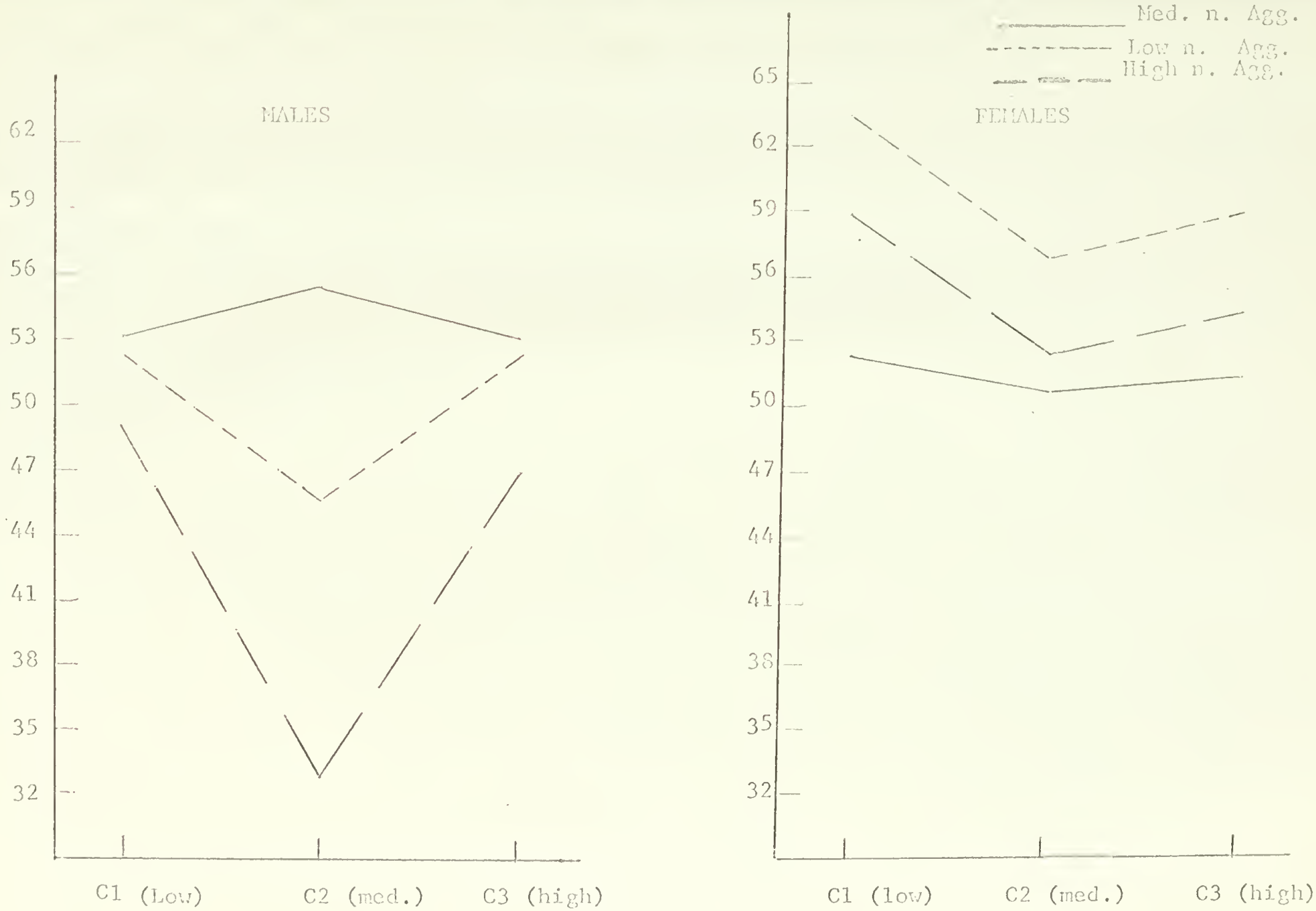

Fig. 3. Mean thresholds to neutral, low aggressive and high aggressive stimuli as a function of n. Agg. and sex of the Ss.

Males

		Stimulus Level		
		C1 (none)	C2 (low)	C3 (high)
n. Agg.	High	49.1	32.8	46.9
	Med.	53.1	55.5	53.1
	Low	52.5	45.6	52.5

Females

		Stimulus Level		
		C1 (none)	C2 (low)	C3 (high)
n. Agg.	High	58.9	52.8	54.6
	Med.	52.4	50.9	51.5
	Low	63.5	57.0	59.1

Values used in
Fig. 3.

Levels of stimulus relevance ^ WITHIN N / SUCC An analysis of variance was performed to determine the effects of the two classes of succorant stimuli on mean perceptual thresholds. The analysis revealed three significant effects (see Table 6). The presence of a significant B effect indicates that sex of Ss was again a significant variable. Female Ss produced a mean perceptual threshold of 55.4 to the pooled succorant dimension, whereas the mean for male Ss was 48.1. The presence of a significant C effect is not particularly meaningful in view of the highly significant D/C effect which indicates a great deal of variability among stimuli within sub-classifications. This is in direct contrast to the non-significant D/C effect for the aggressive stimuli classifications.

A second analysis of variance, including neutral stimuli was performed collapsing over stimuli within sub-categories (see Table 7). C1 represents the mean perceptual thresholds for the three critical neutral stimuli. C2 represents mean perceptual thresholds for the three succorant stimuli depicting child scenes, and C3 represents mean perceptual thresholds for the three succorant stimuli depicting infant scenes. The analysis again yields significant effects due to sex, and stimulus classification, as well as a significant interaction between need groups and stimulus relevance (see Figure 4). The data indicate that Ss low and high on need-aggression performed similarly,

Table 6

Analysis of Variance for Thresholds on Succorant Stimuli

Source of Variance	df	Ss	Ms	F
Total	179	26,863.244		
Between Ss	29	4,841.911		
A (Level of EPPS Need Aggression)	2	180.044	90.022	---
B (Sex of Ss)	1	2,376.200	2,376.200	5.840*
AB	2	1,320.933	660.467	1.623
Ss/AB	24	9,764.734	406.864	
Within Ss	150	22,021.333		
C (Maturity Level of Dependent Figure-Infant vs Child)	1	561.800	561.800	6.699*
AC	2	184.933	92.467	1.103
BC	1	121.688	121.688	1.451
ABC	2	22.179	11.090	---
Ss x C/AB	24	2,012.733	83.864	
D/C (Stimuli/Category)	4	1,806.911	451.728	6.554**
AD/C	8	680.956	85.120	1.235
BD/C	4	659.845	164.961	2.393
ABD/C	8	553.355	69.169	1.004
Residual	96	6,616.933	68.926	

*$P < .025$ **$P < .01$ ---$F < 1.00$

Table 7

Analysis of Variance on Six Critical Neutral Stimuli, Three Child Succorant Stimuli and Three Infant Succorant Stimuli

Source of Variance	df	Ss	Ms	F
Total	89	9,548.64		
Between Ss	29	7,526.33		
A (Level of EPPS Need Aggression)	2	14.46	7.23	<1.00
B (Sex of Ss)	1	1,225.45	1,225.45	6.33**
AB	2	642.86	321.43	1.66
Ss/AB	24	4,643.56	193.48	
Within Ss	60	2,022.31		
C (Level of Stimulus Relevance)	2	411.44	205.72	8.07***
AC	4	262.04	65.51	2.57*
BC	2	54.60	27.30	1.07
ABC	4	68.24	17.06	<1.00
C x Ss/AB	48	1,225.99	25.54	

*P < .05 **P < .025 ***P < .005

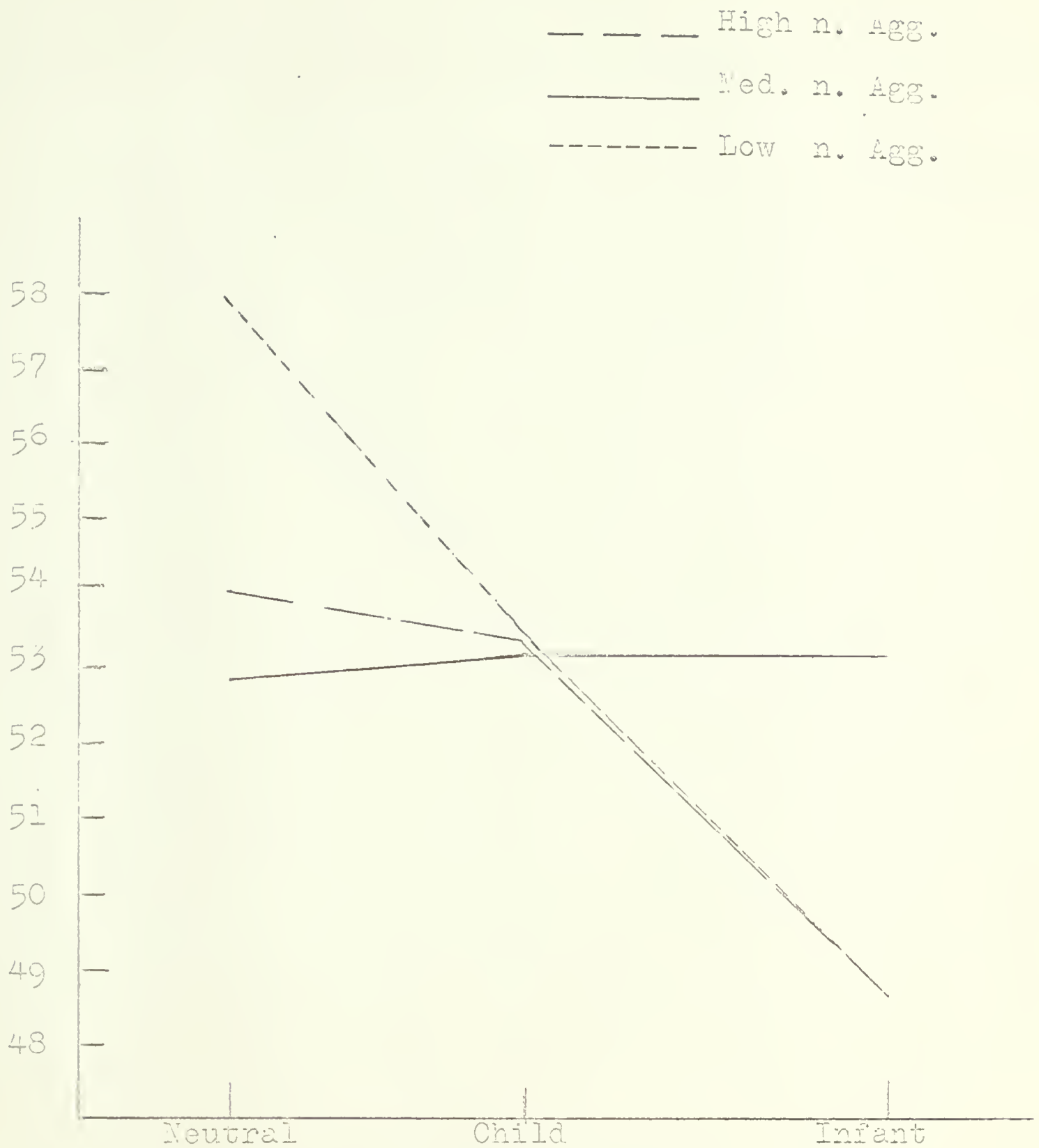

Fig. 4., Mean thresholds to neutral and two levels of succorant stimuli as a function of n. Agg.

		Stimulus Level		
		Neutral	Child	Infant
n. Agg.	High	54.0	53.4	48.6
	Med.	52.8	53.2	53.2
	Low	58.0	53.6	48.6

attaining relatively low thresholds to infant stimuli. Control Ss manifested similar thresholds for all three stimulus classifications.

Relevance of romance and sexual stimuli within need-heterosexuality stimuli An analysis of variance was performed to determine the effect of the two sub-classes of heterosexual stimuli on mean perceptual thresholds (see Table 8). The effect due to the sex of the Ss was significant, with female Ss attaining a mean perceptual threshold of 57.3 for the pooled heterosexual stimuli, and male Ss a mean of 49.2. A significant AC interaction reveals a difference in performance of the groups who differ on n. Aggression to romance as compared to sexual stimuli. The interaction (see Figure 5) is the result of low aggressive Ss having considerably lower thresholds to sexual than to romance stimuli, while medium n. Aggressive Ss show the reverse pattern. High n. Aggressive Ss were similar to low n. Aggressive Ss in obtaining low relative thresholds for sexual stimuli compared to neutral stimuli, but to a lesser extent than the Ss of low n. Aggression. When neutral stimuli were included in the analysis, collapsed over stimuli within sub-categories, the AC interaction was no longer significant (see Table 9 and Figure 5). Results on individual stimuli in the sex dimension are presented in the Appendix.

Table 8

Analysis of Variance for Thresholds on Heterosexual Stimuli

Source of Variance	df	Ss	Ms	F
Total	179	29,482.194		
Between Ss	29	18,301.027		
A (Level of EPPS Need Aggression)	2	426.344	213.172	---
B (Sex of Ss)	1	2,984.938	2,984.938	5.151*
AB	2	982.745	491.373	---
Ss/AB	24	13,907.00	579.458	
Within Ss	150	11,181.167		
C (Stimulus Quality Romance vs Sex)	1	104.272	104.272	1.654
AC	2	518.145	259.073	4.109*
BC	1	4.051	4.051	---
ABC	2	48.099	24.050	---
Ss x C/AB	24	1,513.267	63.053	
D/C (Stimuli/Category)	4	337.889	84.472	1.201
AD/C	8	364.644	45.581	---
BD/C	4	451.577	112.894	1.605
ABD/C	8	1,084.690	135.586	1.927
Residual	96	6,754.533	70.360	

*P < .05 ---F < 1.0

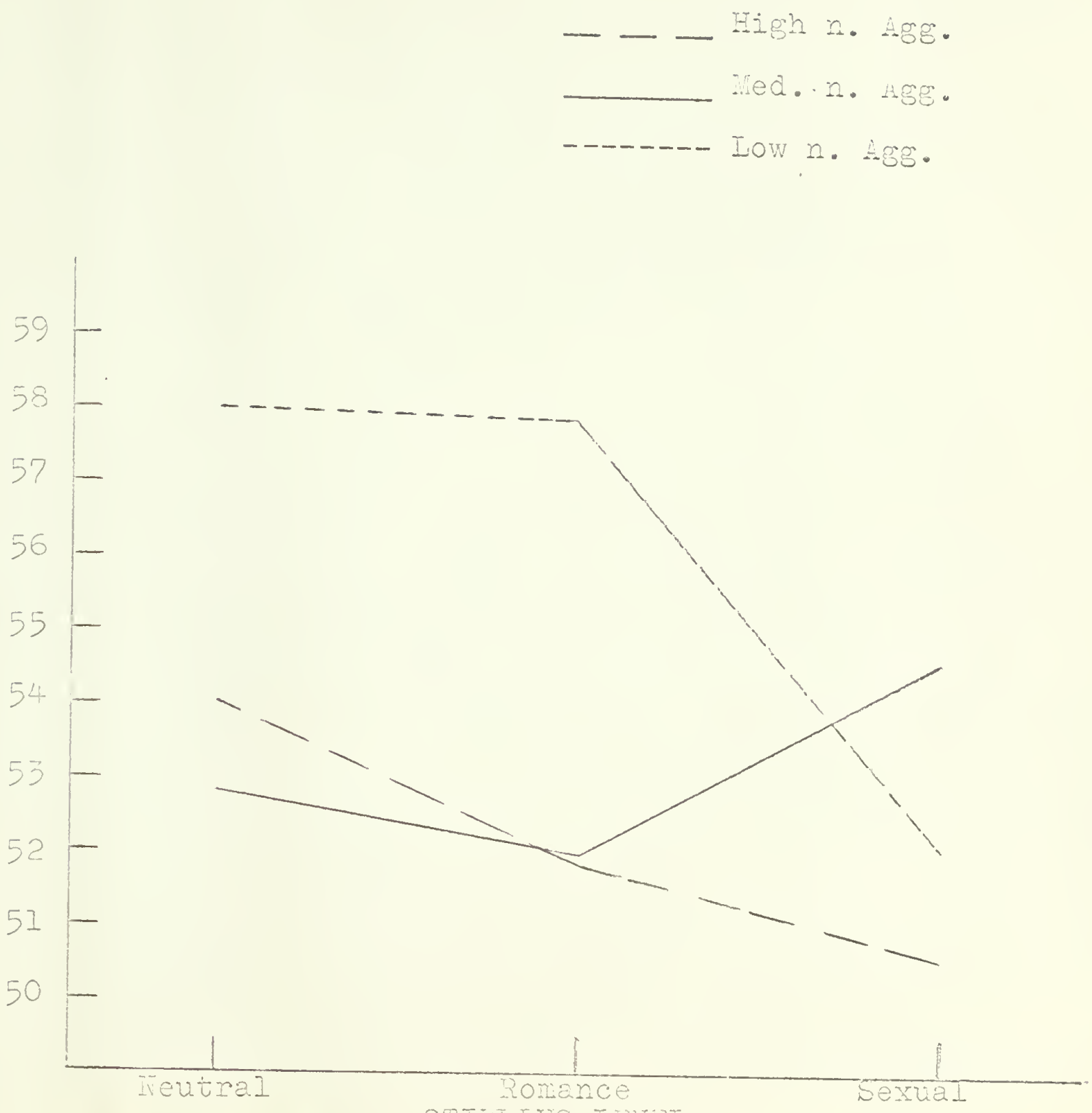

Fig. 5., Mean thresholds to neutral and two levels of heterosexual stimuli as a function of n. Agg.

		Stimulus Level		
		Neutral	Romance	Sexual
n. Agg.	High	54.0	51.9	50.6
	Med.	52.8	52.0	54.6
	Low	58.0	57.9	52.1

Table 9

Analysis of Variance on Six Critical Neutral Stimuli, Three Romance Heterosexual Stimuli and Three Sexual Heterosexual Stimuli

Source of Variance	df	Ss	Ms	F
Total	89	11,069.81		
Between Ss	29	9,375.90		
A (Level of EPPS Need Aggression)	2	248.80	124.40	< 1.00
B (Sex of Ss)	1	1,254.40	1,254.40	4.19*
AB	2	687.58	343.79	1.15
Ss/AB	24	7,185.12	299.38	
Within Ss	60	1,693.91		
C (Level of Stimulus Relevance)	2	202.91	101.46	3.86**
AC	4	142.22	35.56	1.36
BC	2	8.87	4.44	< 1.00
ABC	4	79.12	19.78	< 1.00
C x Ss/AB	48	1,260.79	26.27	

*P < .10 **P < .05

Mean thresholds for neutral stimuli An analysis of variance was performed to determine whether there were any significant sources of variance among the six "critical" neutral stimuli, i.e., the six stimuli that were scored and included in the analyses. No source of variance approached significance except that of sex (B main effect, $p < .10$). Female Ss attained a mean perceptual threshold of 58.2 to neutral stimuli and males a mean of 51.6 (see Table 10).

Table 10

Analysis of Variance for Thresholds on Neutral Stimuli

Source of Variance	df	Ss	Ms	F
Total	179	28,063.394		
Between Ss	29	20,031.561		
A (Level of EPPS Need Aggression)	2	892.744	446.372	---
B (Sex of Ss)	1	2,006.672	2,006.672	3.028*
AB	2	1,226.345	613.173	---
Ss/AB	24	15,905.800	662.742	
Within Ss	150	8,031.833		
D (Stimuli)	5	348.094	69.619	1.224
AD	10	431.056	43.106	---
BD	5	202.228	40.446	---
ABD	10	223.455	22.346	---
Residual	120	6,827.000	56.892	

---$F < 1.00$ *$F < .10$

DISCUSSION

The results of this study support the broad hypothesis that personality variables influence perception. A perceptual task characterized by minimal possibilities of being confounded by "response" variables was employed. It is therefore unlikely that the data can be interpreted in terms of response bias.

The data confirm the hypothesis that high self-reported n. Aggression is associated with relatively low recognition thresholds for aggressive stimuli. Ss admitting to a high degree of aggressive impulses perceived stimuli which depicted aggressive scenes more quickly than stimuli which depicted neutral or non-aggressive emotional scenes. The hypothesis that high self reported need-aggression would also be associated with relatively low thresholds for non-aggressive emotional stimuli, though to a lesser extent than for aggressive stimuli, was similarly confirmed by the data. High need-aggression Ss perceived stimuli depicting heterosexual and succorant scenes more quickly than neutral stimuli, but not as quickly as stimuli which depicted aggressive scenes.

Results referred to above are consistent with the concept of "perceptual sensitization". It is assumed that Ss who admit to a high degree of aggression are apt to be especially alert and sensitive to aggressive cues. Consequently, they are capable of correctly identifying aggressive stimuli at greater levels of ambiguity. This interpretation is also consistent with a concept of needs influencing perception by establishing a "set" for attending to need relevant cues.

The high EPPS n. Aggression S appears to react in a manner similar to the S whose Rorschach and Thematic Apperception Test (TAT) responses are characterized by an unusually high number of overtly aggressive fantasies. He can be described as either "sensitized" to aggressive cues or as unable to control aggressive fantasy even though he may wish to. (These two classifications are, of course, points on a continuum, and are recognized as such though they are not so dealt with here.) The "sensitizer" is more likely to respond adequately and appropriately, his sensitization often taking the form of an intellectualized, obsessive defensive structure. The individual with uncontrolable aggressive fantasies is more likely to perform inadequately and inappropriately, often ascribing aggressive themes to stimuli containing minimal aggressive cues. The fact that college students were used as Ss in this study made it unlikely that they fall into this latter

category. It would be more likely for Ss who are unable to control aggressive fantasy to be found among patient populations. The negligible number of inappropriately aggressive identifications of non-aggressive stimuli supports this conclusion.

The relative sensitization of high aggressive Ss to heterosexual and succorant stimuli is also consistent with clinical evidence, which supports the existence of generalized defensive patterns within an individual. Thus, an individual defending intellectually against one area of need, or conflict, would be likely to defend intellectually against threatening stimulation in other areas of need or conflict.

The hypothesis that low self reported need-aggression is associated with relatively elevated recognition thresholds for aggressive stimuli was not confirmed by the data. Ss reporting a low degree of aggressive impulses perceived aggressive stimuli more quickly than neutral and heterosexual stimuli (though this latter difference was minimal). Their pattern of performance on these three classes of stimuli was unexpectedly similar to the pattern of performance of high-aggressive Ss, though relative sensitization among Ss in the low aggressive group was not so pronounced. Similarly, the hypothesis that low self-reported n. Aggression is associated with relatively elevated thresholds to non-aggressive emotional stimuli, but to a lesser extent

than to aggressive stimuli was not confirmed by the data. Further study seems necessary to understand why both low and high n. Aggressive Ss manifest relative sensitization to aggressive stimuli. This relative sensitization may be accounted for by the hypothesis that need and perception are basically linearly related, but other factors must also be considered. This explanation is based on the speculation that Ss reporting unusually low levels of need-aggression are, in reality, denying a relatively high degree of aggressive impulses. Both high and low need-aggression Ss perceived aggressive stimuli more quickly than neutral stimuli. Low aggressive Ss perceived aggressive and heterosexual stimuli with comparable speed, while their thresholds for succorant stimuli were lower than their thresholds for each of the other three stimulus classes. Clinical evidence supports the idea that the denial of aggressive impulses is often associated with strong dependency needs. The failure of medium or average aggressive Ss to manifest relative sensitization for aggressive stimuli supports the notion of need and perception being basically linearly related if we assume that their reporting of average levels of aggression reflects a relative lack of disturbance about their aggressive impulses as compared to the other two subject groups each of which reported either unusually high, or unusually low levels of need-aggression.

Although low aggressive Ss did not perform in accordance with the hypothesis concerning perceptual defense for emotional as compared with neutral stimuli, the overall performance of this group relative to the performance of the high aggressive group does fit with some expectations relevant to the concepts of perceptual defense as well as perceptual sensitization. Low aggressive Ss manifested higher thresholds to neutral, aggressive, and heterosexual stimuli than did high aggressive Ss. This disparity was most pronounced for the mean thresholds of the two groups to aggressive stimuli. Only the mean thresholds for succorant stimuli were similar for the two groups. The similarity of the thresholds of the two groups for succorant stimuli demonstrated that stimulus relevance associated with appropriate needs can counteract any general timidity or uncertainty to respond, which may characterize low aggressive Ss.

The differential performance of male and female Ss can be interpreted as reflecting only a general timidity regarding the response processes of female Ss. Were the interaction between sex and need areas significant, a strong case might have been made for relating the data to explicit patterns of perceptual defense.

Mean threshold as a function of stimulus relevance High and low aggressive Ss manifested similar threshold patterns

to stimuli depicting varying levels of aggressive content. Both groups attained thresholds to stimuli of low aggressive content which were significantly lower than their thresholds for stimuli of highly aggressive content or stimuli of no aggressive content (neutral stimuli). This response pattern is almost identical to the "goodness" of response patterns attained by parachutists whose experimental task was to create stories to TAT type stimuli containing varying degrees of relevance to parachuting (Fenz and Epstein, 1962). Epstein (1962) likened cue relevance to stimulus similarity in Miller's conflict model, and expressed the belief that approach and avoidance tendencies can be measured by verbal responses to conflict-relevant stimuli. The patterns of perceptual thresholds for Ss of high and low n. Aggression fit the Miller model, which would predict highest net-approach tendencies to stimuli of an intermediary level of aggressive content for Ss in conflict over their aggressive impulses.

Epstein points out that the same net approach tendency can be produced by different combinations of approach and avoidance. It is therefore impossible, on the basis of their responses, to say for certain whether high need Ss differ from low need Ss in drive level, level of inhibition or both. The nature of the EPPS is such that it does not allow one to discriminate between states of low drive

and high inhibition. The EPPS simply determines the extent to which aggressive needs are reported. It is likely that Ss reporting levels of aggressive impulses which deviate markedly from the norm in either direction have in common significant internal and/or external conflicts over their aggressive impulses. The performance of medium or average need Ss indicates that, as expected, anxiety, and consequent conflict, was lowest in this group.

One might argue that mean thresholds to succorant stimuli should not vary to any significant degree with n. Aggression. Yet clinical evidence suggests that persons in conflict over their aggressive impulses are likely to be in conflict over their dependency needs as well. The mean thresholds for succorant stimuli suggest that this may well be the case. A comparison with the performance of the three need groups on aggressive stimuli reveals certain parallels. First, the medium aggressive group varies only slightly in their thresholds for the three stimulus categories. Second, the high and low aggressive groups manifest relative sensitization to one category of emotional stimuli, in this case infant stimuli. Originally we would have predicted that infant stimuli would be more relevant to need succorance than child stimuli, mainly on the basis of classical psychoanalytic theory. It is possible, however, that scenes in which children are depicted as dependent figures have more significance for a group

of young adults than scenes in which infants are depicted as the dependent figures. If, in fact, this is the case, then the data on succorant stimuli could be interpreted as analogous to that on aggressive stimuli in that both can be interpreted as reflecting conflict over instinctual impulses.

Individual stimuli within the neutral and heterosexual dimensions failed to distinguish the groups. One might argue that if the conflict hypothesis was valid it should show up in the data on heterosexual stimuli, as clinical evidence supports the idea of a dynamic relationship between sex and aggression. However, it is possible that the supposed relationship between these two drives is of a highly complex nature. Within limits, aggression can facilitate sex, although beyond a point the two tend to be incompatable. Aggressive and succorant behaviors and relationships, on the other hand, are incompatable under all but the most bizarre circumstances.

Need level, sensitization and defense The results of this study are interpreted as supporting the notion of selective perception as a phenomena which exists independently of response probabilities. The complex nature of the pictorial stimuli, as well as the use of but a few such stimuli suggests that unlike studies which have presented a great number of words in a single class, obtaining proper responses

through the influence of response bias is unlikely. Although response probabilities seemed unlikely to have been a significant variable it was felt that they should be investigated in their own right, as a further check, by looking at pre-recognition guesses. An examination of these guesses showed that only five incorrect guesses having no close correspondence to the stimulus could be related to the need areas used in this study. Of these five, four were relevant to n. heterosexuality and one to n. Aggression. Thus there is no basis for evaluating the influence of need on response bias in the present study. The results suggest that most previous experimentation in this area has suffered from two significant misconceptions. The first misconception is that ego-defensiveness is exhibited only in threshold evaluation. The failure to consider that some Ss may exhibit sensitization and some defense is apt to result in a cancelling out process. It is therefore necessary to consider individual differences in defensive patterns when investigating each of these phenomena. A second and related misconception is that emotional stimuli, in general, should necessarily be perceived more slowly than neutral stimuli. One way of explaining the phenomena of perceptual defense is that pre-recognition cues falling in certain sets warn the organism against an impending threatening stimulus thereby allowing the ego to delay the undesirable recognition. It

is possible, however, that a general set for recognizing certain cues can, after being acknowledged, lead an individual to react in opposite fashion. It also seems possible that sets relating to certain need areas could lead to the early perception of emotional as compared to neutral stimuli where threat is not a factor. Further work is necessary to determine to what extent apparent sensitization is used in the service of defensiveness and to what extent it occurs for other reasons.

SUMMARY

The purpose of this study was to investigate the relationship between self reported need-aggression and perceptual thresholds to aggressive stimuli, neutral stimuli, and emotional stimuli in two need areas other than aggression. It was hypothesized that the phenomena of perceptual "defense" and perceptual "sensitization", to aggressive stimuli and to emotional stimuli in the need areas of succorance and heterosexuality , would be demonstrated. It was predicted that Ss reporting high levels of need-aggression would manifest relatively low perceptual thresholds to aggressive stimuli, and that Ss reporting low levels of need-aggression would manifest relatively high perceptual thresholds to aggressive stimuli.

The Ss used in the study were college undergraduates, preselected on the basis of high, medium, and low levels of need-aggression, as measured by the Edwards Personal Preference Schedule. Three experimental groups of 10 Ss each were selected. Each of these groups contained five males and five females. A perceptual recognition task, utilizing line drawings of human and animal figures, was

employed. Six of these drawings were judged as having no particular need relevance (neutral stimuli), six were judged as having relevance to need-aggression, six as having relevance to need-succorance and six as having relevance to need-heterosexuality. These drawings were presented by a modified slide projector which initially projected the stimuli out of focus, and gradually brought the stimuli into full focus. The S was asked to stop this process when he could correctly identify the stimulus, thereby recording a perceptual threshold for each stimulus. The data were analyzed by analyses of variance. Analyses were performed on the data as a whole, and on levels of need relevance within each stimulus category. The data confirmed the prediction that Ss reporting a high degree of aggressive impulses would have lower thresholds to aggressive stimuli than to neutral stimuli, succorant stimuli, or heterosexual stimuli. The data also confirmed the prediction that high aggressive Ss would manifest lower thresholds to heterosexual and succorant stimuli than to neutral stimuli. Contrary to expectations, low n. Aggressive Ss attained thresholds to aggressive stimuli which were lower than their thresholds to neutral and heterosexual stimuli. Their mean thresholds to these three stimulus classes, however, were all higher than the thresholds of high n. Aggressive Ss. Low n. Aggressive Ss attained their lowest thresholds to succorant stimuli. The data also indicated

that female Ss attained higher thresholds to all classes of stimuli than males.

The results were interpreted as supporting a relationship between need variables and selective perception.

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APPENDIX

Minimum information for a correct response

Aggressive stimuli

1. Two bears either fighting or poised for combat.
2. One man shaking his fist at another man.
3. One man hitting another man.
4. Two animals in the "deer" family fighting.
5. A man has stabbed another and has a knife in his hand.
6. A man is strangling or choking another man.

Heterosexual stimuli

1. A man and woman walking together.
2. Two opposite sexed animals in the "deer" family looking at each other.
3. A man standing with his arm around a woman.
4. A man and woman are embracing in bed.
5. A man is kissing a woman.
6. A man is kissing a woman.

Succorant stimuli

1. A woman is holding an infant.
2. A bitch is suckling her litter.
3. A woman is holding and feeding her infant, with a bottle.
4. A woman is reading to her child.
5. A bear is walking with a cub.
6. A woman is feeding a child.

Neutral stimuli

1. A cat.
2. A dog.
3. An ostrich.
4. A penguin.
5. A man skiing.
6. Two rabbits.

Table 1

Analysis of Variance for Thresholds on Intensity Level of Aggressive Stimuli (not including Neutral Stimuli)

Source of Variance	df	Ss	Ms	F
Total	179	29,194.328		
Between Ss	29	13,285.495		
A (Level of EPPS Need Aggression)	2	1,214.011	607.006	1.640
B (Sex of Ss)	1	1,508.006	1,508.006	4.074*
AB	2	1,678.811	839.406	2.267
Ss/AB	24	8,884.667	370.194	
Within Ss	150	15,908.833		
C (Intensity Level of Aggressive Stimuli)	2	591.745	295.873	4.272**
AC	4	899.622	224.906	3.247**
BC	2	231.544	115.772	1.672
ABC	4	681.089	170.272	2.459*
CS/AB	48	3,324.333	69.257	
D/C (Stimuli/Category)	3	502.883	167.628	1.558
AD/C	6	631.167	105.195	.978
BD/C	3	229.083	109.694	1.025
ABD/C	6	973.167	162.197	1.508
Residual (D x S/ABC)	72	7,744.200	107.558	

*$P < .10$ **$P < .025$

Table 2

Mean Perceptual Threshold to Aggressive Stimuli

		Levels of Stimulus Intensity			
		C_1*(Low)	C_2(Moderate)	C_3(High)	$\bar{X}$
High Need Group	Males	32.8	49.9	44.0	42.2
	Females	52.8	54.8	54.4	54.0
	$\bar{X}$	42.8	52.3	49.2	48.1
Medium Need Group	Males	55.5	48.4	57.8	53.9
	Females	50.9	51.5	51.5	51.3
	$\bar{X}$	53.2	50.0	54.7	52.6
Low Need Group	Males	45.6	53.7	51.2	50.2
	Females	57.0	60.0	58.1	58.4
	$\bar{X}$	51.3	56.9	54.7	54.3
		$\bar{X}\ C_1 = 49.1$	$\bar{X}\ C_2 = 53.1$	$\bar{X}\ C_3 = 52.8$	

* $C_1 = \bar{X}$ stimulus #20 + #21; $C_2 = \bar{X}$ stimulus #22 + #23; $C_3 = \bar{X}$ stimulus #24 + #25.

Table 3

Analysis of Variance on Moderate and Highly Intense Aggressive Stimuli*

Source of Variance	df	Ss	Ms	F
Total	59	23,732		
Between Ss	29	17,186		
A (Level of MPPS Need Aggression)	2	1,039	520	---
Ss/A	27	16,147	598	
Within Ss	30	6,546		
C (Intensity Level of Aggressive Stimuli)	1	2	2	---
AC	2	735	368	1.71**
SsC/A	27	5,809	215	

*This analysis was performed rounding off to nearest whole digit.

**Not significant. ---F < 1.0

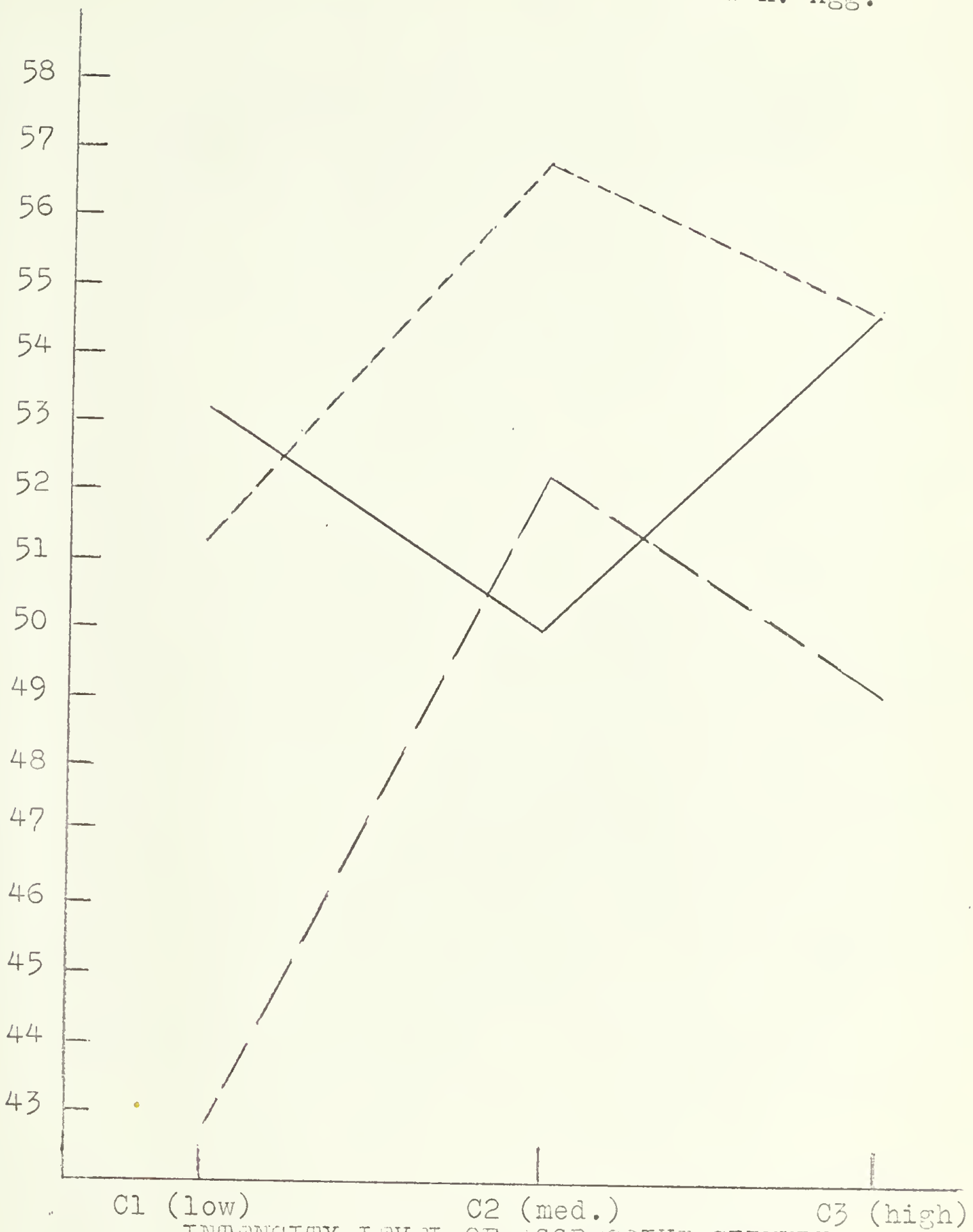

Fig. 1. (appendix), Mean thresholds to three levels of aggressive stimuli as a function of n. Agg.

		Stimulus Level		
		C1 (low)	C2 (med.)	C3 (high)
n. Agg.	High	42.8	52.3	49.2
	Med.	53.2	50.0	54.8
	Low	51.3	56.9	54.8

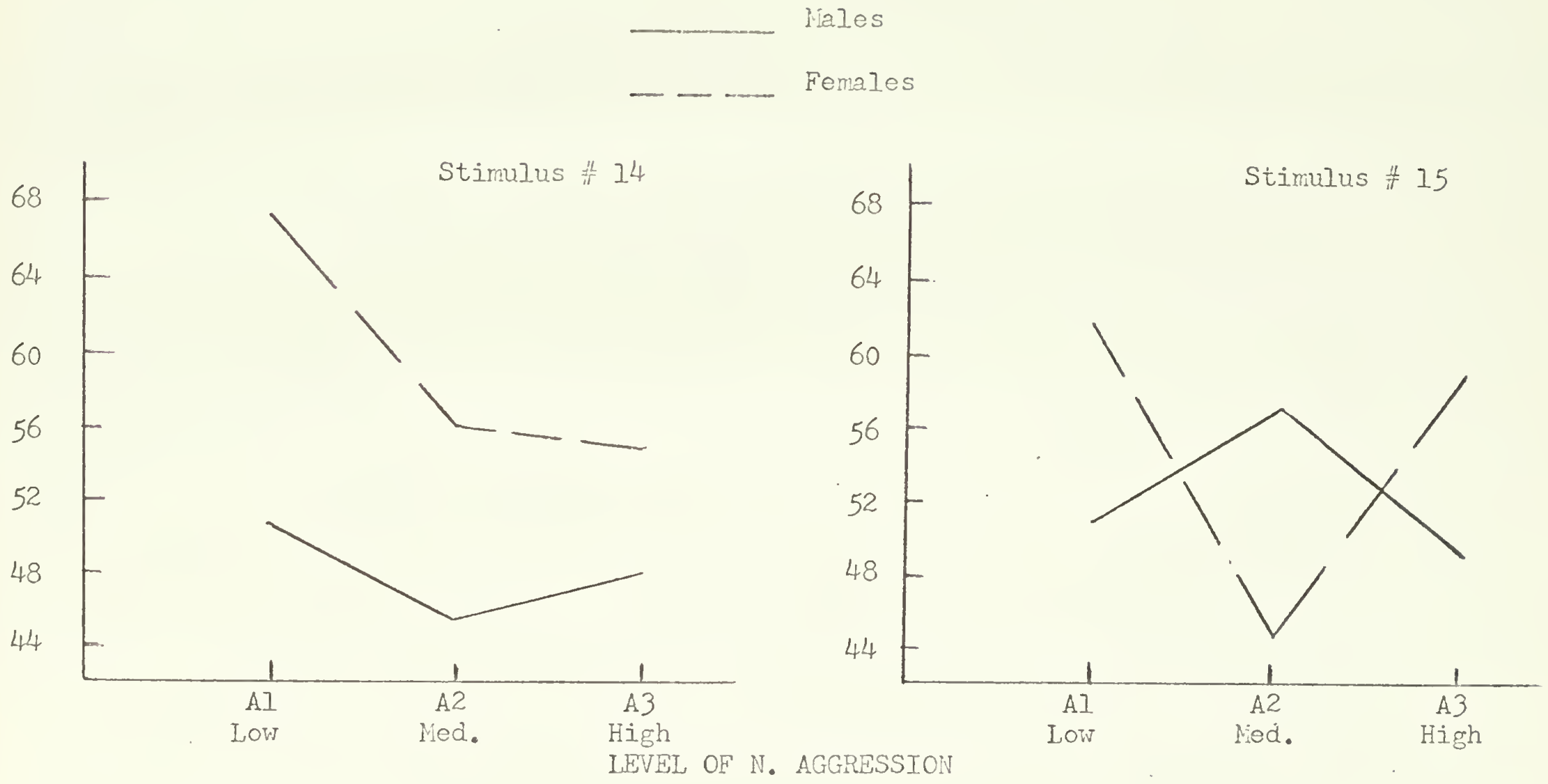

Fig. 2. (Appendix) Mean thresholds to individual heterosex. stimuli as a function of n.Aggression and sex of the Ss.

Values used:

Low
Stimulus # 14 (Romance)
Man and woman walking.

A3 M 48.0, F 54.8
A2 M 45.4, F 55.8
A1 M 50.6, F 67.4

Low
Stimulus # 15 (Romance)
Buck and doe looking at each other.

A3 M 48.8, F 58.8
A2 M 57.0, F 44.6
A1 M 50.8, F 61.8

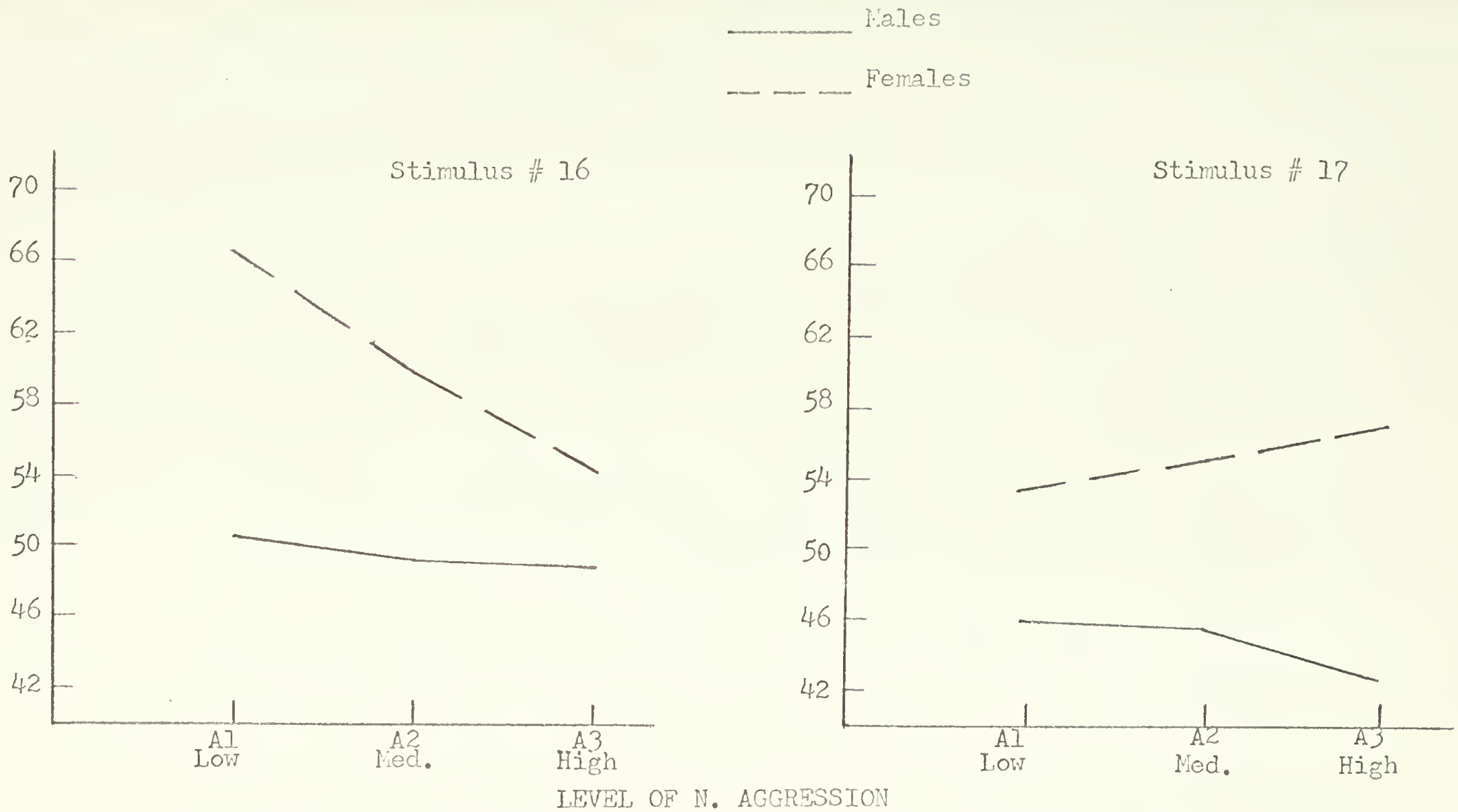

Fig. 3. (Appendix) Mean thresholds to individual heterosex. stimuli as a function of n. Aggression and sex of the Ss.

Values used:

Stimulus # 16 (Romance) Man with arm around a woman.	Med. A3	M 48.8, F 54.2
	A2	M 49.6, F 59.8
	A1	M 50.6, F 66.4
Stimulus # 17 (Sexual) Man kissing a woman.	Med. A3	M 42.6, F 56.8
	A2	M 45.6, F 55.0
	A1	M 45.8, F 53.6

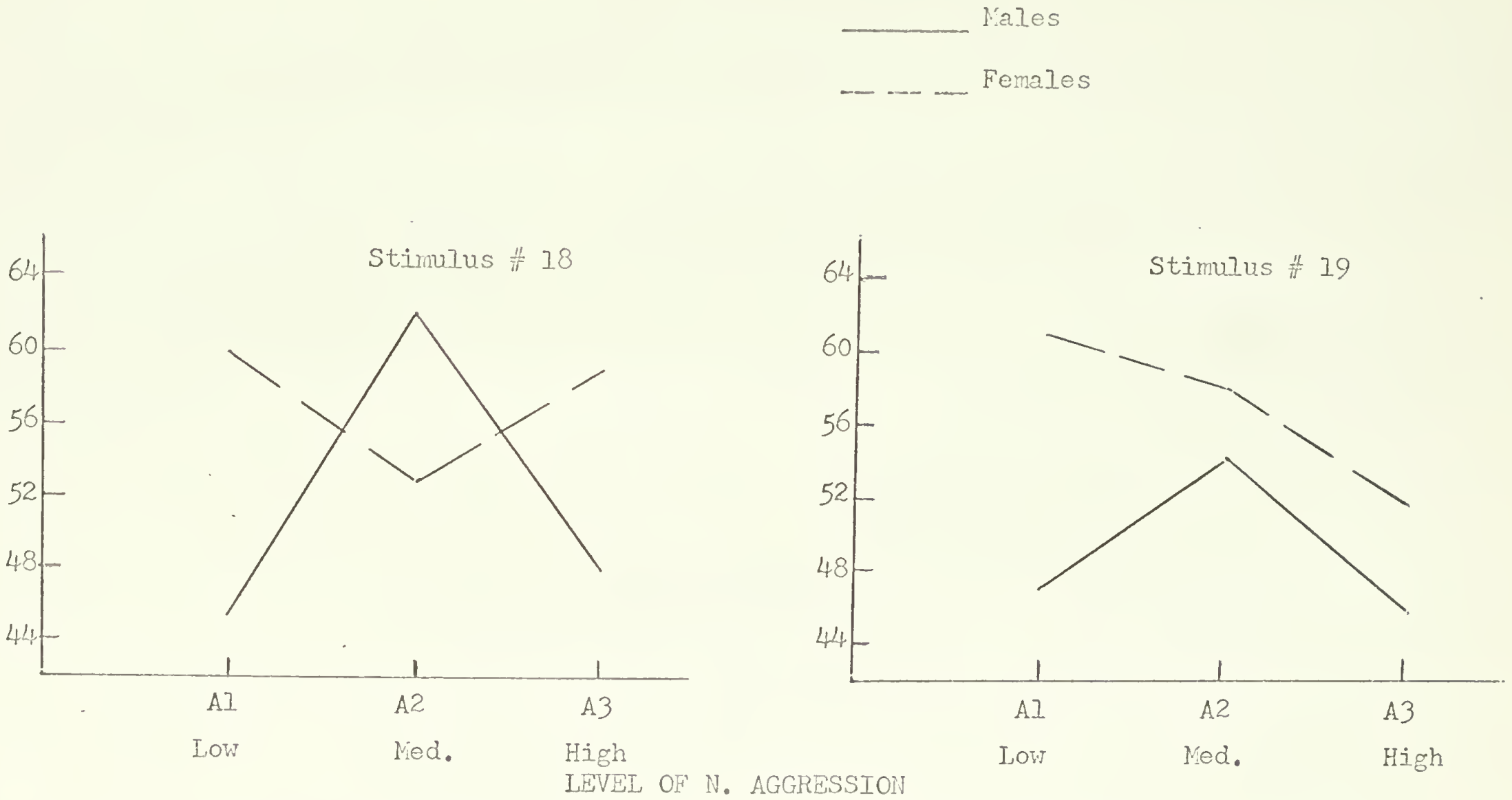

Fig. 4. (Appendix). Mean thresholds to individual heterosex. stimuli as a function of n. Aggression and sex of the Ss.

Values used:

Stimulus # 18 (High Sexual)
Man kissing a woman suggestively.

A3	M 48.0,	F 58.8
A2	M 62.0,	F 52.6
A1	M 45.4,	F 59.8

Stimulus # 19 (High Sexual)
Man embracing a woman in bed.

A3	M 45.8,	F 51.8
A2	M 54.2,	F 57.8
A1	M 47.2,	F 61.0

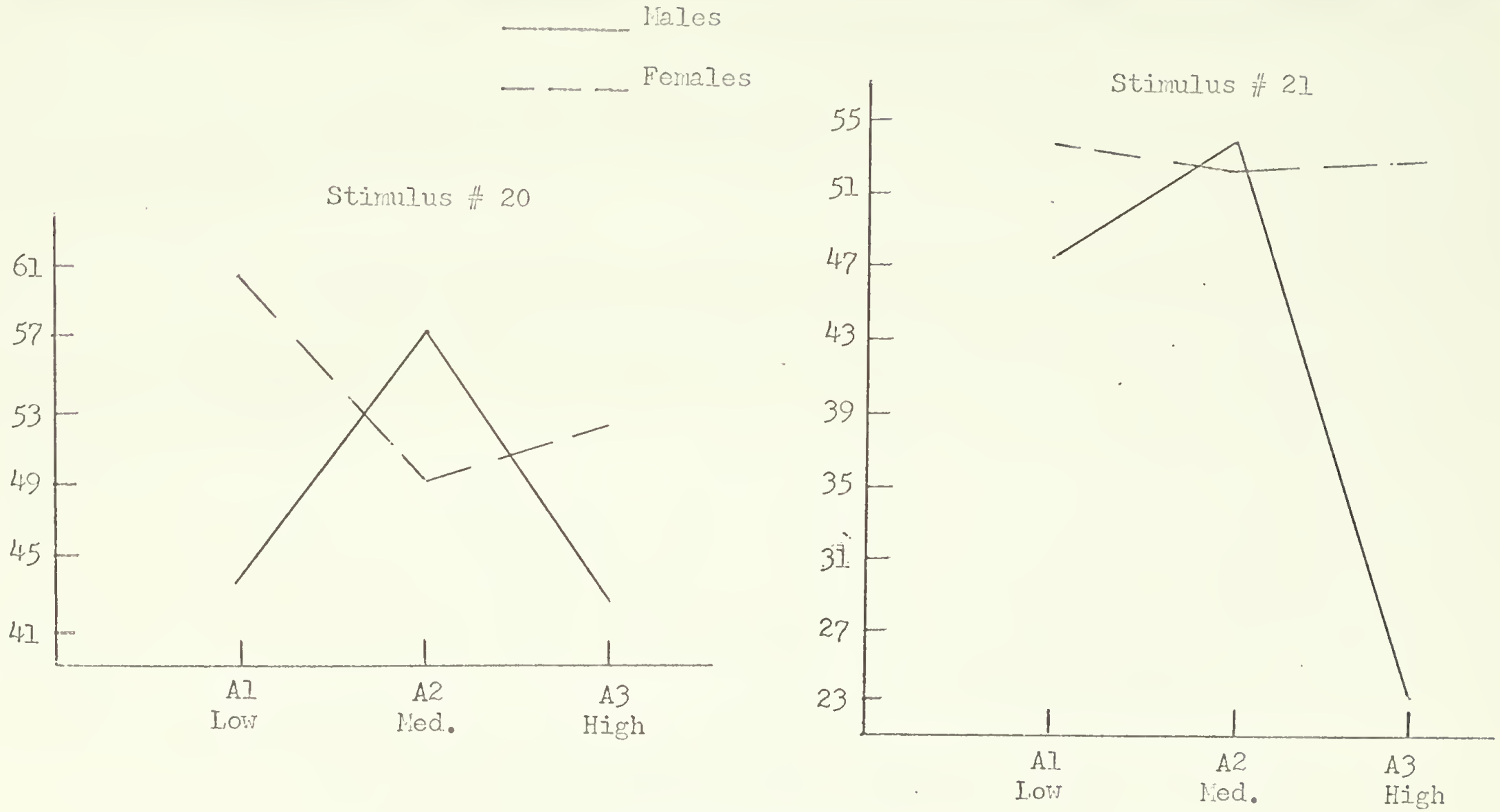

Fig. 5. (Appendix) Mean thresholds to individual aggressive stimuli as a function of n. Aggression and sex of the Ss. *

Values used:	Stimulus # 20 (Low Agg.) Two bears poised for combat.	A3	M 42.6, F 52.8
		A2	M 57.2, F 49.4
		A1	M 43.6, F 60.4
	Stimulus # 21 (Low Agg.) Man shaking his fist at another man.	A3	M 23.0, F 52.8
		A2	M 53.8, F 52.4
		A1	M 47.6, F 53.6

* Note that the two graphs are not aligned.

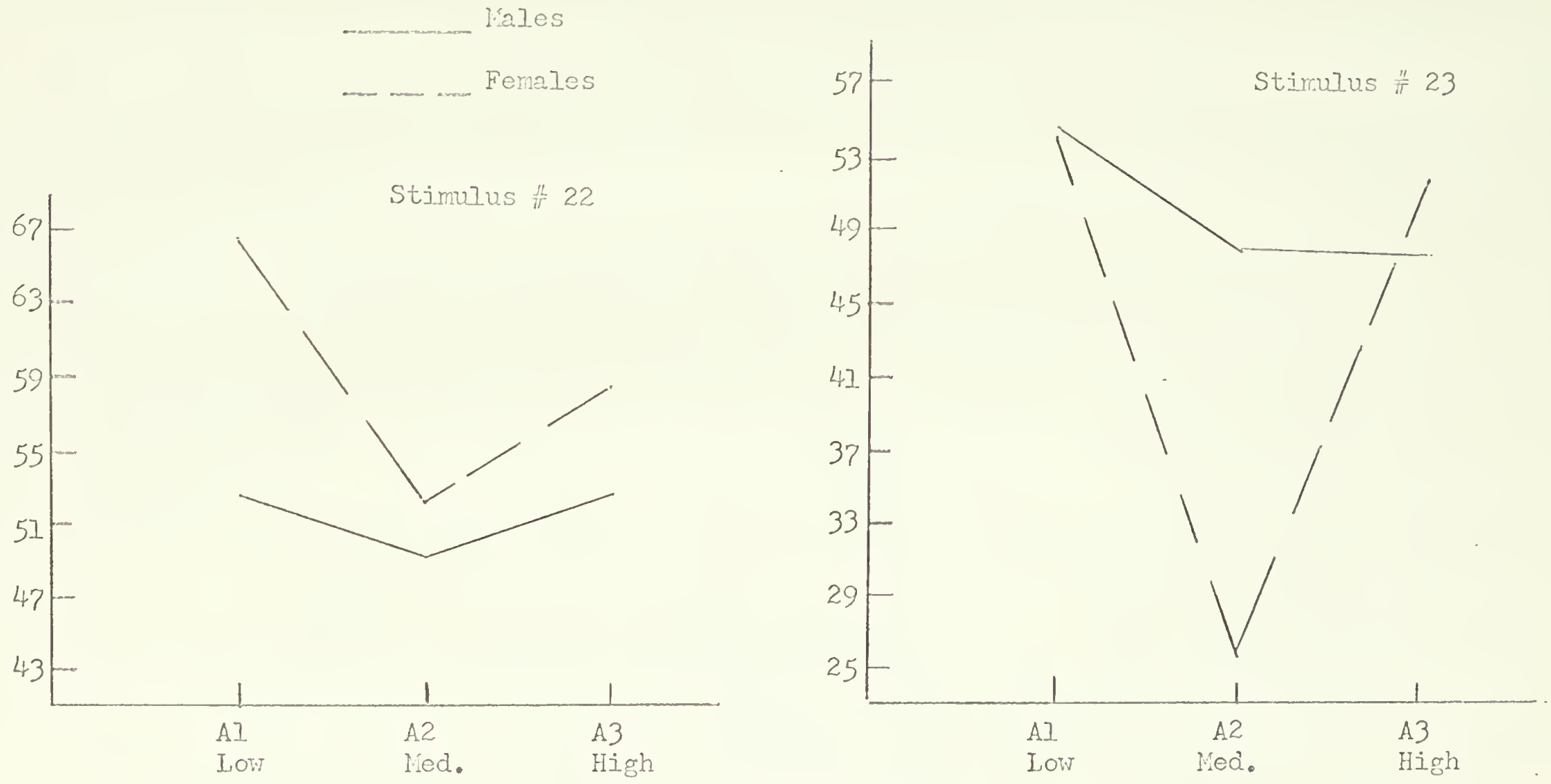

Fig. 6. (Appendix) Mean thresholds to individual aggressive stimuli as a function of n. Aggression and sex of the Ss. *

Values used: Stimulus # 22 (Med. Agg.)
One man punching another.

A3	M	52.4,	F 58.4
A2	M	49.0,	F 52.6
A1	M	52.8,	F 66.2

Stimulus # 23 (Med. Agg.)
Fighting bucks.

A3	M	47.4,	F 51.2
A2	M	47.8,	F 25.2
A1	M	54.6,	F 53.8

* Note that the graphs are not aligned.

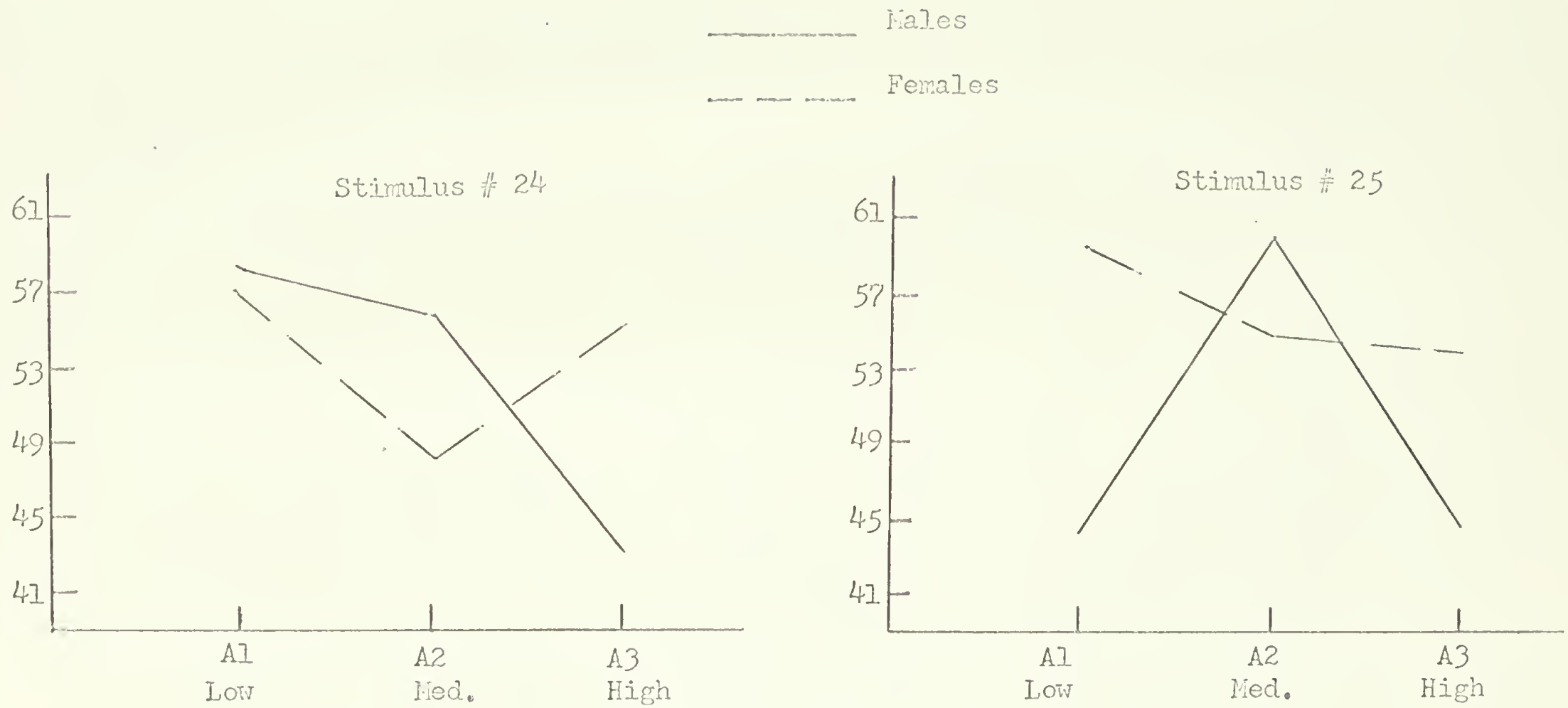

Fig. 7. (Appendix) Mean thresholds to individual aggressive stimuli as a function of n. Aggression and sex of the Ss

Values used:

Stimulus # 24 (High Agg.) Man stabbed another man.
A3 M 43.2, F 55.2
A2 M 55.8, F 48.2
A1 M 58.2, F 56.8

Stimulus # 25 (High Agg.) Man strangling another.
A3 M 44.8, F 53.6
A2 M 59.8, F 54.8
A1 M 44.2, F 59.4

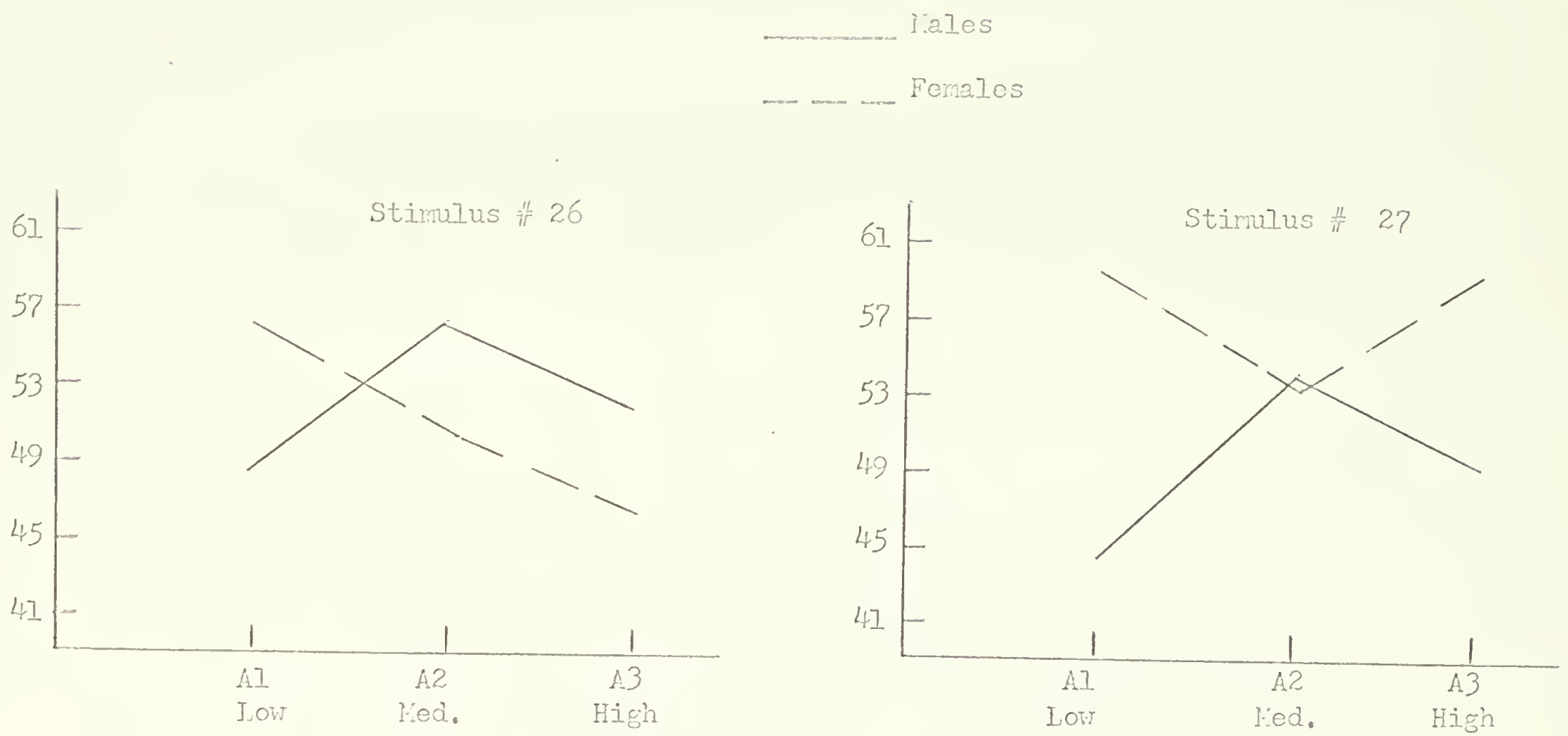

Fig. 8. (Appendix) Mean thresholds to individual succorant stimuli as a function of n. Aggression and sex of the Ss.

Values used:

Stimulus # 26 (child) Woman reading to a child.	Low A3	M 52.0,	F 46.6
	A2	M 56.6,	F 50.8
	A1	M 48.6,	F 56.6
Stimulus # 27 (child) Bear and cub walking.	Low A3	M 49.2,	F 59.6
	A2	M 54.0,	F 53.8
	A1	M 44.6,	F 59.4

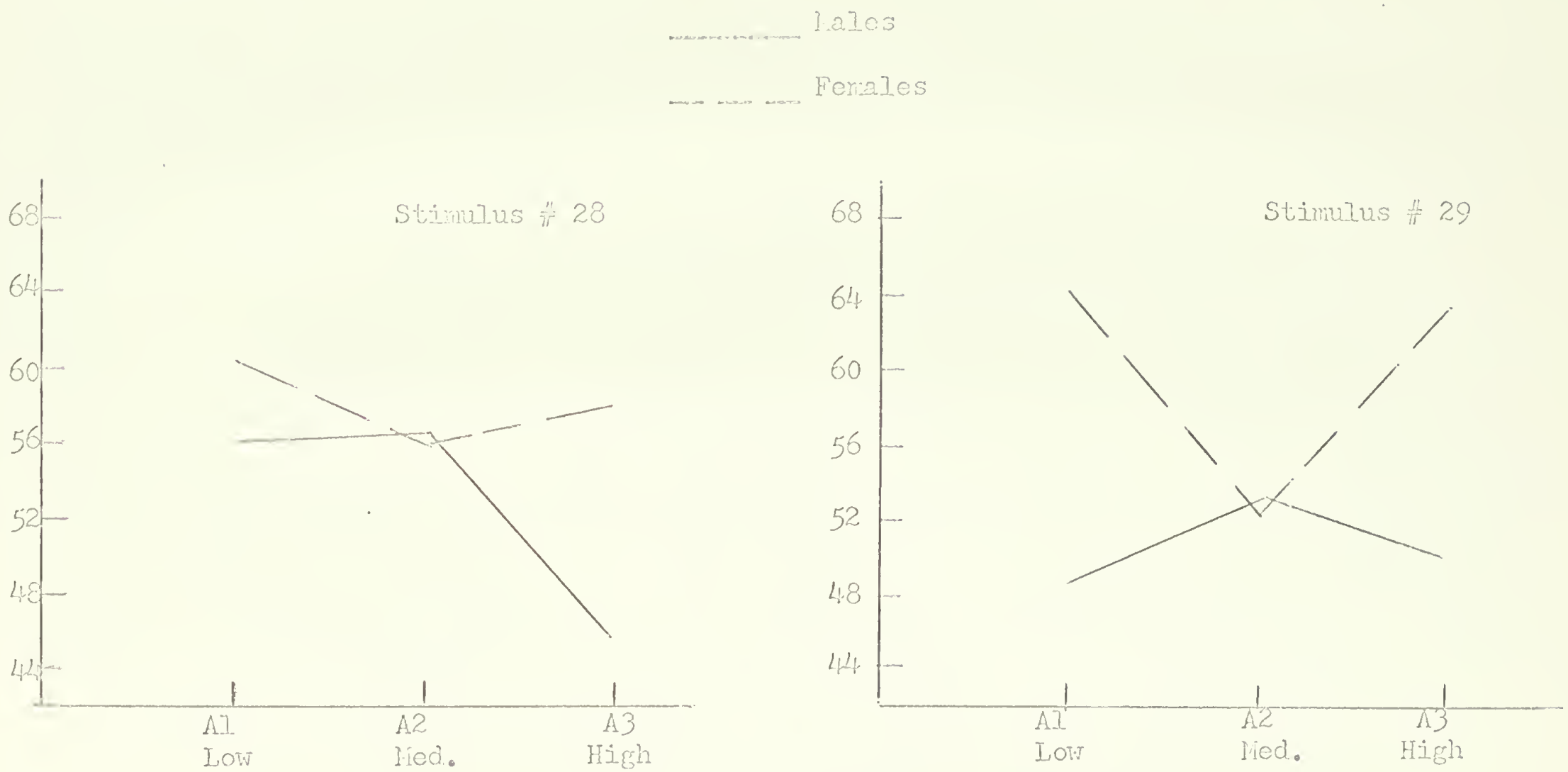

Fig. 9. (Appendix) Mean thresholds to individual succorant stimuli as a function of n. Aggression and sex of the Ss.

Values used:

Stimulus # 28 (Med. infant) Woman holding infant.

A3 M 45.8, F 58.0
A2 M 56.6, F 56.0
A1 M 56.0, F 60.2

Stimulus # 29 (Med. child) Woman feeding child.

A3 M 50.0, F 63.2
A2 M 53.0, F 52.8
A1 M 48.4, F 64.2

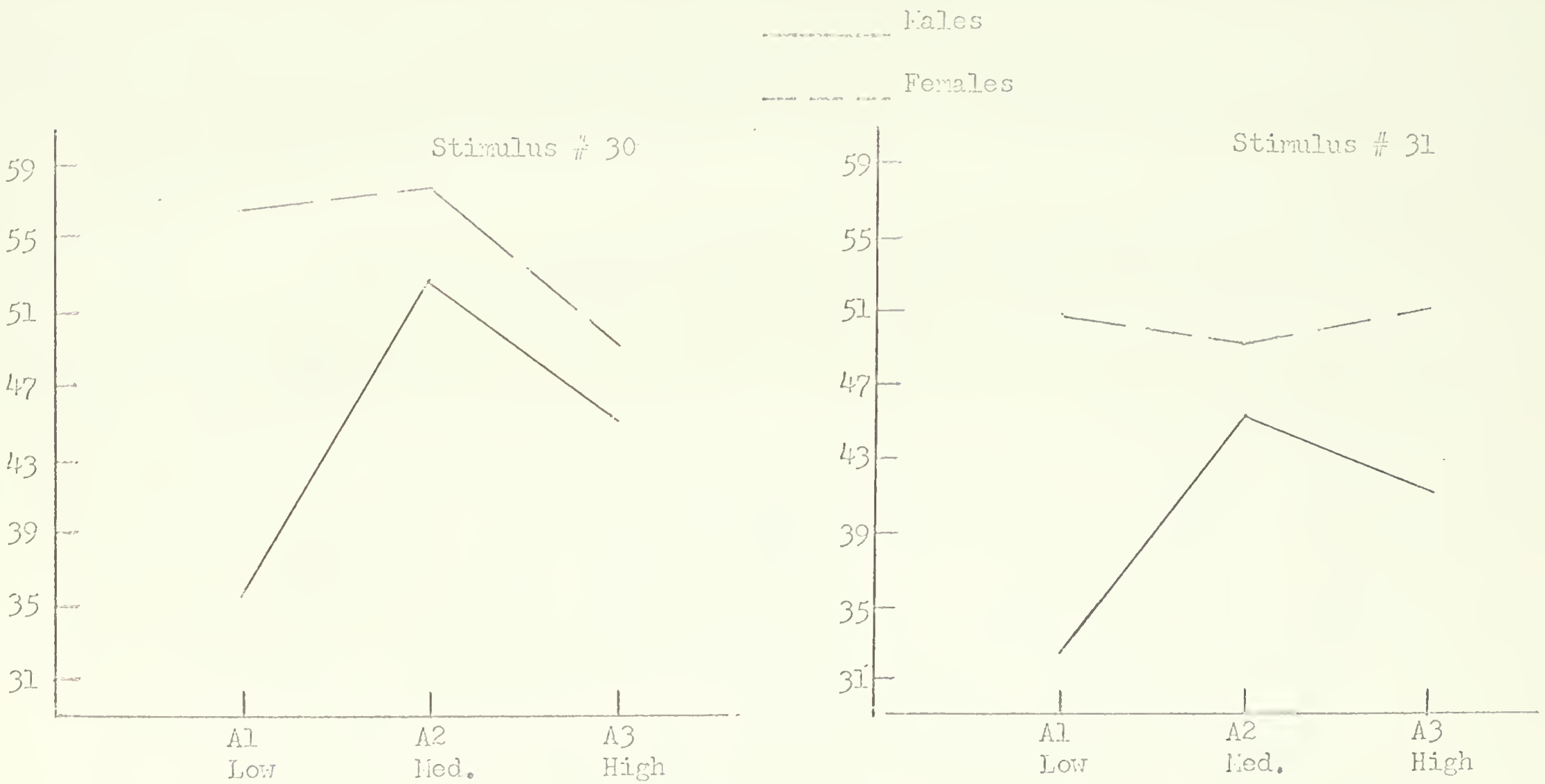

Fig. 10. (Appendix) Mean thresholds to individual succorant stimuli as a function of n. Aggression and sex of the Ss.

Values used:	Stimulus # 30 (infant) Bitch suckling litter.	High A3	M 45.4, F 49.6
		A2	M 52.8, F 57.8
		A1	M 35.4, F 56.8
	Stimulus # 31 (infant) Woman feeding infant.	High A3	M 41.0, F 51.2
		A2	M 45.2, F 49.4
		A1	M 32.4, F 51.0

Thresholds of Each S for Each Stimulus (T-scores)

	S	Neutral						Heterosex.						Aggressive						Succorant					
		5	6	7	8	9	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	1	67	54	60	52	54	46	61	41	44	55	40	46	45	00	60	[illegible]	53	47	[illegible]	53	[illegible]	[illegible]	38	40
	2	50	44	45	56	50	40	46	45	47	35	52	60	41	35	59	59	40	44	60	38	33	47	40	42
Males	3	67	55	41	65	77	52	54	70	65	55	59	66	59	28	58	56	48	56	50	68	56	68	54	59
	4	45	50	43	37	54	54	35	52	56	31	60	35	45	37	46	58	46	34	[illegible]	43	55	35	63	27
	5	35	34	47	37	29	35	44	36	32	37	29	22	23	15	39	14	24	43	32	39	33	42	32	37
High n, Agg. group	6	66	70	62	67	66	55	63	81	62	65	71	65	61	55	78	66	61	52	62	70	63	75	61	51
	7	36	40	35	39	32	36	34	37	32	53	40	43	36	46	33	19	26	44	[illegible]	42	43	45	42	52
Females	8	72	60	62	69	64	61	61	67	57	65	64	57	60	64	64	49	63	52	63	70	70	64	46	36
	9	78	70	60	63	83	79	64	66	73	64	72	59	70	52	63	65	63	69	27	60	68	76	57	62
	10	59	47	57	65	57	56	52	43	47	37	47	35	37	47	49	57	63	51	53	56	46	56	42	55
	1	52	59	58	43	48	59	41	55	64	55	66	64	58	43	43	47	61	54	61	47	74	49	48	41
	2	31	55	60	51	47	49	38	57	52	36	59	55	66	57	48	57	58	53	53	50	56	41	64	41
Males	3	68	47	67	51	64	42	39	63	28	35	53	59	58	57	38	65	52	65	64	69	45	46	47	37
	4	52	66	49	43	44	42	42	54	41	40	63	38	45	55	62	39	50	61	41	46	47	51	41	45
	5	72	55	48	61	51	58	67	56	63	62	69	55	59	57	54	31	58	66	64	58	61	78	60	62
Med. n, Agg. group	6	[illegible]	52	[illegible]	43	44	44	41	25	46	59	46	65	57	57	39	55	58	44	43	60	61	40	66	58
	7	71	[illegible]	71	64	59	59	70	55	67	63	60	51	57	56	61	65	19	70	59	66	54	56	64	44
Females	8	49	40	48	58	43	39	49	54	63	54	57	69	47	51	49	47	57	49	48	53	66	64	59	44
	9	58	52	55	48	51	62	53	46	58	42	55	57	49	47	53	42	60	46	49	54	51	54	50	57
	10	40	46	41	52	70	49	66	43	65	57	45	47	37	51	61	43	47	65	55	36	48	50	50	44
	1	37	49	43	44	27	44	57	33	37	54	22	25	37	64	44	55	58	33	41	33	42	36	14	24
	2	50	63	60	58	58	54	55	54	52	35	62	49	41	53	63	52	60	47	51	40	51	36	54	36
Males	3	55	50	43	43	38	53	41	43	41	37	32	40	46	23	56	43	61	34	42	46	48	47	24	24
	4	72	56	58	49	67	70	46	67	61	46	47	65	49	38	48	70	63	55	64	55	74	60	50	34
	5	65	54	55	49	54	56	54	57	62	57	64	57	45	60	53	53	49	52	45	49	65	63	35	44
Low n, Agg. group	6	76	64	62	65	68	62	74	59	68	46	54	62	54	44	57	50	58	57	63	54	59	[illegible]	58	56
	7	82	80	81	92	84	79	81	81	79	73	78	65	71	57	82	65	58	70	64	72	68	78	64	[illegible]2
Females	8	73	71	61	57	69	64	74	70	70	61	57	65	71	6o	79	65	63	70	61	71	67	[illegible]	62	60
	9	67	60	73	67	53	57	64	57	68	52	63	65	71	57	63	65	58	53	53	59	64	[illegible]	58	40
	10	42	36	35	53	31	40	44	42	47	36	47	48	35	50	50	24	47	47	42	41	43	42	42	37

APPROVED:

Harold Lamm

Date 8/15/66