Turner, Arlinza Earl

THE RELATIONSHIP BETWEEN TWO CLASSES OF MEASURES EXAMINED IDIOTHETICALLY AND NOMOTHETICALLY

The University of North Carolina at Greensboro PH.D. 1986

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THE RELATIONSHIP BETWEEN TWO CLASSES OF MEASURES EXAMINED IDIOTHETICALLY AND NOMOTHETICALLY

by

Arlinza E. Turner

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APPROVAL PAGE

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The present study was designed to investigate the relationship between the subjective and physiological measures of sexual arousal. Twenty males were seen individually on four different occasions to view erotic slides and photographs of females and males while two physiological and five subjective measures were taken. The relationship among these measures was evaluated within-subject, across four assessment sessions (idiothetic level of analysis) and between-subject, both within and across the four sessions (nomothetic level of analysis).

It was hypothesized that different analyses would result in markedly different conclusions regarding the relationship among these variables. It was expected that different levels of responding would serve to attenuate between measure correlations at the nomothetic level of analysis, while having little or no effects on these relationships at the idiothetic level. A public-private manipulation was included to ensure that subjects would perform differently on the various measures. Differences in the instructions and how these instructions were delivered to subjects distinguished the two conditions. It was hypothesized that in addition to influencing level of responding that these two conditions would also differentially influence intercorrelaions.

Data from the two analyses were compared along three dimensions--pattern similarities/differences among the measures, statistical relationship among the measures, and by examining the influence of the public-private manipulation on intercorrelations. More patterns were judged similar, and higher statistical correlations were observed for idiothetic as compared to nomothetic data. Furthermore, with nomothetic data no difference was observed between the public and private subjects for either the male or female slides, while the difference between these two conditions was significant for male slides with idiothetic data.

The present study provides empirical evidence to support the differences between idiothetic and nomothetic analyses. As such, it reconfirms the need for individualized assessment, especially when examining intercorrelations, as well as the need for caution when applying nomothetic derived treatments and findings to individuals.

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CHAPTER I

Introduction

Toward the end of the 19th century, Windelband (cf. Holt, 1962) proposed that the terms idiographic and nomothetic be used to distinguish two types of science: the natural science (nomothetic) from the moral or the social science (idiographic). The basic contention was that in natural science, exact and precise laws, which could be generalized, were possible. A social science (e.g., history, literature), conversely, was chance dependent and "geared toward understanding specific events, persons, or works, rather than in treating these as incidental to the discovery of general laws" (Holt, 1962, p. 381). The term "nomothetic" was applied to the study of precise laws, while "idiographic" was concerned with an intense study of an event or person.

Allport (1937) is credited with introducing the idiographic-nomothetic distinction into the psychology of personality. Allport (1937, 1962) argued that the uniqueness of personality is often destroyed in an attempt to develop nomothetic, generalizing principles. The consequences of losing this unique information are poor prediction. He further argued that since personalities are interpretive constructs, which are not facts, they are incapable of giving rise to testable theorems (Allport, 1937; cf. Falk, 1956). As such, they are not to be assessed through a scientific method. He viewed personalities, like histories of persons and events, as unique; and, therefore, they could not be explained (predicted) adequately through general laws. The uniqueness of personality could be understood primarily on a case by case method. Therefore, the idiographic approach proposed by Windleband to study the unique quality of a history, seemed applicable to the study of personality (Allport, 1962).

While there were others (e.g., Beck, 1953; Dymond, 1953) who adhered to the notion that there are nomothetic (generalizing) and idiographic (individualizing) approaches to the science of personality, there were also many critics (see Holt, 1962 for a review). The decline in interest in this issue during the mid-sixties can perhaps be accounted for by the criticisms, coupled with the confusion produced when Allport (1962) introduced new terms (e.g., dimensional, morphogenic) to replace the term idiographic.

During recent years the issue has once again reemerged as a central issue in personality. Several articles (e.g., Epstein, 1979, 1980; Lamiell, 1980, 1981) have been devoted to the idiographic-nomothetic distinction and its relevance to understanding personality. The importance of this issue is highlighted by the recent edition (September, 1983) of the Journal of Personality which is devoted entirely to this issue.

Historically, idiographic has referred to a description of attributes or qualities manifested by a given individual. From this description, hypotheses are often made to be tested nomothetically. "Why should we not start with individual behavior as a source of hunches (as we have in the past), and then seek our generalizations (also as we have in the past), but finally come back to the individual for a fuller, supplementary, accurate assessment" (Allport, 1962, p. 402). Contemporary theorists, however, have given more scientific, empirical status, to the term idiographic. The problem of personality description would be approached in an explicitly idiographic (study of a single individual over time), in which nomothetic principles (confirmation across a number of individuals) would be sought (Lamiell, 1980, 1981). Because of this fundamental distinction, the term "idiothetic" has replaced "idiographic." The latter refers to a description of an individual, while the former to general principles predicated on the study of many individuals.

The idiothetic-nomothetic distinction as currently relevant to personality is based on the assumption that the goal of a science of personality is to isolate those constructs or attributes (underlying traits in which temporal generalizability is assumed) that allow for an adequate description of any given individual over time and situations.

Lamiell (1980, 1981) argues that the conventional coefficients (e.g., reliability, validity, generalizability) utilized in personality research are inadequate in performing this task since they are derived from data summed across individuals. Such coefficients provide evidence of the degree of inconsistency with which specific attributes are manifested by the group, but provide little evidence of how these attributes are manifested by any given individual in that group. "A personality coefficient that deviates from 1.00 is prima facie evidence that the individuals in one's sample were not equally consistent (or inconsistent) in their manifestations of the attribute(s) in question" (Lamiell, 1981, p. 279).

In an effort to provide empirical support for this position, Lamiell, Trierweiler, and Foss (1983) assessed 19 subjects on four attributes on three occasions. At the group level of analysis, the subjects were consistent over time in their manifestation of these attributes. For example, a significant omega-square ratio (.76) was obtained at the group level of analysis for a measure of subjects' "use of time." Data derived idiographically for this attribute, however, revealed omega square values that varied substantially across subjects (.02 to .25), suggesting that subjects varied widely in the consistency of their manifestation of this attribute.

The idiothetic-nomothetic debate is not specific to the area of personality. The issues fueling this debate parallel quite closely those within behavioral assessment relevant to understanding the relationship among response systems. Briefly, in the personality literature there seems to be a desire to understand the relationship between trait measures and overt behavior. It is assumed that the relationship between "true" trait measures and overt behavior should be strong across time and situations since traits are stable, enduring factors. However, trait measures frequently fail to correlate with overt behavior, or even with other trait measures supposedly measuring the same traits (Epstein, 1983; Lamiell, 1980; Mischel, 1968). Methodological problems are often cited as the reason for the lack of stability and the weak relationship often observed among these measures (e.g., Epstein, 1983; Lamiell, 1980). Similarly, in behavioral assessment there is a desire to understand the relationship between self-report, physiological, and overt behavior (often referred to as the triple response mode). Although not explicitly stated, it is assumed that the relationship among these measures on any behavior in its pure form should be stable and consistent. This, for example, is implied in the term "desynchrony," which means "a removal of synchrony." Specifically, there is an implied assumption that there should be agreement or correlation among response systems. As in personality theory, failure of measures to covary is assumed to be caused by additional contingencies, such as methodological artifacts.

Both trait theorists and behavioral assessors seek to understand behavior by specifying the predictive ability of one measure for another. In trait theory, for example, the goal is to predict overt behavior across time and situations from measures of psychological traits. In behavioral assessment there is also a need to predict performance on one measure from another in an effort to understand generalization among the three response systems.

In personality theory, covergent validity and other kinds of nomothetically derived psychometric principles have been employed to evaluate the quality of measures which are used to assess these intrapsychic traits and their relationship with overt behavior. While some support this strategy (e.g., Mehrabian & O'Reilly, 1980), others (e.g., Allport, 1962; Lamiell, 1980) contend that it has been this practice of examining relationships at the level of the group which have contributed significantly to the problem of understanding traits. Therefore, it has been proposed (e.g., Lamiell, 1980, 1981, 1983) that traits or trait measures be investigated idiothetically. The basic contention is that nomothetic analyses are insensitive to the variation in relationships that occur between individuals. Specifically, degree of consistency among measures vary from individual to individual; therefore, it is only at the level of the individual that the issue of stability of traits can be addressed. Similarly, in behavioral assessment, many of the issues surrounding the triple response model (e.g., How do agreement and disagreement among measures occur? How to produce generalization across systems? What is the relationship between assessment and treatment? How to evaluate the quality of behavioral assessment and treatment?) seem to be grounded in this idiothetic-nomothetic debate as well. For example, in our desire to understand agreement and disagreement among measures, nomothetic studies have invariably demonstrated that measures may or may not covary. Even when they covary in one study, they may or may not covary in another similar study. Evidence (e.g., Barlow, Mavissakalian, & Schofield, 1980; Leitenberg, Agras, Butz, & Wincze, 1971), however, suggest that covariation among measures may be subject specific. That is, the degree of relationship between two measures may vary from subject to subject. It is not clear how these between-subject differences in relationship are presented in nomothetic data.

It is the purpose of this study to demonstrate empirically the need for evaluating relationship among measures idiothetically. However, prior to discussing the relevance of the idiothetic-nomothetic debate to the concept of the triple response model, it seems necessary to discuss this model further.

The Three Response System

One of the common major assumptions underlying behavioral assessment is that a global behavior (e.g., depression, anxiety) is a composite of events which can be categorized into at least three types of responses--verbal-cognitive, physiological, and overt-motor (Lang, 1968, 1971). Although not always explicitly stated in the literature, it is often assumed that information obtained from each of these response systems on any behavior in its pure form should covary. This assumption is implied in the very use of the term desynchrony (Rachman & Hodgson, 1974) to describe a lack of covariation since it suggests that there has either been a reversal or a removal of synchrony. Research findings often show disconcordance either between or within response types (e.g., Borkovec, Weert, & Bernstein, 1977; Hodgson, Rachman, & Marks, 1972; Lang & Lazovik, 1963). Since the three systems may function independently of each other, most theorists believe that a thorough behavioral assessment usually requires that information be gathered from each of the three response systems (e.g., Ciminero, Adams, & Calhoun, 1977).

The assumption that three response systems are usually involved in the manifestation of most behavior, and that covariation among these systems cannot be assumed, has become known as the triple response system (Cone, 1979; Nelson & Hayes, 1979). There are important conceptual and theoretical issues surrounding this model. It is not the purpose of this paper to recapitulate the arguments. The interested reader is referred to Cone (1979) and Hugdahl (1981) for a review of these issues. It does seem important, however, to discuss the reasons given for proposing the model, and the reasons the model has endured despite its many criticisms.

There are several reasons given for proposing the three system model. First, not any of the responses in a given system are unique to a particular behavior (Lang, 1971). For example, the physiological responses often associated with anxiety, such as rapid heart rate, and changes in skin potential and in respiration, are also apparent during non-anxious states, such as when one is sexually aroused (Zuckerman, 1971). Specifically, there is a significant amount of overlap in responding within each response system across behavior.

Another reason for proposing the three response system is that different organismic and/or environmental variables may alter responses in a given system without having any influence on another system. In the presence of parents or relatives, for example, a homosexual may report and exhibit behavior consistent with heterosexuality for fear of being ostracized, but still have homosexual arousal patterns. The variables influencing, say, the verbal mode may differ from those influencing the physiological system.

A third reason for proposing the triple response system has to do with the differential sensitivity of each response system. This is quite apparent in clinical research where patients often respond to treatment by showing uneven changes across response modes. In sexual arousal research, for example, subjects often report little or no arousal to an erotic stimulus (verbal-cognitive), while simultaneously showing changes in sexual arousal as indicated by physiological recordings (e.g., Geer, Morkoff, & Freenwood, 1974). In anxiety research, subjects often show rapid changes in overt behavior to a feared object, but do not show any initial lessening of fear on questionnaires or interview reports (Lang & Lazovik, 1963). Patients treated for an obsessive-compulsive disorder by flooding and response prevention intially learn to prevent their rituals, but it is only after days and sometimes weeks that the urges and the negative emotional states begin to extinguish (Hodgson, Rachman, & Marks, 1972; Hodgson & Rachman, 1974; Rachman, Marks & Hodgson, 1973). Similarly, patients often make changes in the behavioral component prior to showing any evidence in the reduction of physiological or verbal report of stress (Watson, Gaind, & Marks, 1972).

There are also important practical reasons for adhering to a triple response model. For example, it is often difficult to define and diagnosis most behavior disorders without making reference to cognitive events, subjective perception, overt behavior, and physiological arousal. This is expressed in DSM III (Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, American Psychological Association, 1980) where the criteria for making a diagnosis frequently makes reference to these three areas. For example, a generalized anxiety disorder is categorized by the patient's motoric responses (e.g., trembling, strained face, eyelid twitch, fidgeting), by physiological behavior (e.g., dyspharesis, paresthesia, frequent urination, diarrhea), and by verbal-cognitive responses ("I feel on edge...I have difficulties concentrating").

Another reason for proposing the triple response model is that since some behaviors may involve a combination of a number of responses, it is often necessary to assess all three components in order to determine adequately the maintaining factors. Finally, there are treatment implications inherent in this model. Treatment may have differential impact on the three systems. For example, systematic desensitization involving the relaxation of muscles would be expected to be more effective with the physiological responses than with the verbal or the overt component of anxiety (Wolpe, 1978). Therefore, a patient whose sensitivity is greater on physiological measures might benefit more from systematic desensitization than say from in-vivo (e.g., flooding) therapy, which appears to be oriented toward altering motoric responses.

In summary, the rationale underlying the triple response model seems multifaceted. First, within each of the three systems, several responses may occur. For example, the physiological component associated with anxiety may involve rapid heart rate and sweating. These components, however, are not specific to anxiety, for other behaviors, say sexual arousal, may also involve these same physiological components. Secondly, environmental and organismic variables may alter the responses in one system without changing those in another. Similarly, degree of sensitivity varies from system to system so that when a treatment is implemented, all systems do not change at the same rate or extent. Also, at the practical level, a clinical diagnosis is frequently made on the basis of a deficit in each of the three areas.

These reasons accent the importance of evaluating a global behavior within a three-system framework. They also highlight the need for understanding the conditions under which these systems relate (synchrony), as well as the conditions which abate this relationship (desynchrony). In the area of treatment, for example, it would seem important to know how measures come to agree. Specifically, while there is some disagreement among clinicians as to what target behavior (i.e., verbal, motoric or physiological) should be addressed in treatment (Nelson & Hayes, 1979), there is some consensus among clinicians that the system which has the greatest success probability should not be ignored. The efficacy of any treatment would be enhanced if it not only altered that most meaningful response system, but also produced therapeutically beneficial response generalization. It may therefore be important empirically to validate those conditions which may cause systems to cling or cluster together. After this knowledge is obtained, clinicians may be better able to design treatments that are effective across systems, and to understand why some treatments are effective in this regard.

Synchrony and Desynchrony Among Response Systems

It is often implied that the magnitude of correlations among response systems in their natural form are high, and that certain events often occur which abate this relationship. Because of this notion, researchers have placed greater emphasis on identifying those factors which tend to reduce the correlations among response systems than on identifying those factors which enhance such relationships. As a result of this focus, many conditions which may give rise to desynchrony have been isolated, including organismic and current environmental variables (Lang, 1968, 1971), treatment effects (Hodgson & Rachman, 1974), and methodological artifacts (Cone, 1979; Hodgson & Rachman, 1974). Studies evaluating desynchrony, however, have frequently relied on nomothetically derived data in reaching conclusions. For example, in an effort to evaluate the quality of measures used in behavioral assessment, Cone (1979) suggested, on the basis of nomothetic data, that methodological artifacts might produce desynchrony. One problem here is that such conclusions are often interpreted as if they also speak to the level of the individual. Since Cone's model is being evaluated throughout this manuscript, a detailed description of the model seems important at this time.

Cone (1979) has argued that in an attempt to find correlations among response systems researchers have usually varied method of assessment (e.g., self-report vs. motor) and behavior (e.g., approach vs. fear) in computing correlations. In a typical fear study, for example, subjects are often asked to rate their amount of anxiety (internal feelings about the feared item) which is an indirect type of measurement of fear. The dependent measures for the motoric and the physiological modes might be direct observation of the degree of approach, and changes in skin response, respectively. In studies such as this, when response systems fail to correlate, the general conclusion is that each system is functioning independently and the lack of covariation is due to actual differences among the systems. However, there are methodological problems which makes this conclusion questionable. While method varied (e.g., direct vs. indirect observation), the content areas and behaviors covaried. For example, self-reports were not taken on approach or physiological reactions. Thus, method, content, and behavior are confounded. It is then difficult to determine whether the observed desynchrony is due to real differences in the systems, differences in content areas, or to differences in the methods used to sample each system.

In order to sort out these confounds, Cone (1979) proposed assessing behavior within a multimethod, multicontent, multibehavior framework. For example, if a behavior within a given content area is assessed by two different methods, and the magnitude of correlation between these two methods is low, then it seems unreasonable to expect high correlations between different content areas measured by these different methods. More concretely, if self-report and direct observation of approach behavior do not correlate highly, it is not surprising to find that self-reported fear and direct observation of physiological arousal differ: method differences alone can account for the results.

The efficacy of Cone's model is shown in studies where a high correlation within and between two or more response systems is observed when method and content is controlled (e.g., Borkovec, Stone, O'Brien, & Kaloupek, 1974; McReynold & Stegman, 1976). As such, Cone's model appears to be particularly beneficial in aiding researchers in developing new assessment instruments. The model, however, is predicated on nomothetic data, which may be inconsistent with data derived idiothetically. The implications of such differences, especially in evaluating the quality of behavioral measures, have yet to be explored. It is possible that two measures judged to be related at one point in time, may not be related another point in time. Also, two measures deemed unrelated nomothetically, may show a high correlation at the level of the individual. Cone's model does not take these factors into consideration, and, therefore, its usefulness in evaluating the quality of measures remain tentative at best.

One problem in addressing the issue of desynchrony and synchrony is how to proceed with such an evaluation. That is, different methods of assessing these two conditions could in fact produce different conclusions regarding the relationship between two measures. In order to clarify this point further, it is necessary to focus attention on the implications of the idiothetic-nomothetic distinction to understanding the triple response model, especially synchrony and desynchrony.

The Idiothetic-Nomothetic Distinction: Its Implications for the Triple Response Model

Traditionally researchers have attempted to describe the relationship among response systems nomothetically. That is, two groups of subjects, say anxious and nonanxious college students, are compared at one point in time for the purpose of describing the relationship among measures. The data are usually summated across subjects and correlations are determined. Statements are then made regarding individuals in the study, and inferences are made to the "real" world. For example, it is not uncommon to see statements such as physiological measures of sexual arousal do (e.g., Heiman, 1975; Mavissakalian, Blanchard, Abel, & Barlow, 1975) or do not (e.g., Wincz, Hoon, & Hoon, 1977; Geer, 1977) correlate well with self-report of arousal, or that self-report often do not correlate well with more objective measures (e.g., Mischel, 1969; cf. Epstein, 1979); all of which are based on aggregated data.

While there are certainly situations which demand the use of a nomothetic analysis, several problems limit its value as a means of investigating the relationship among response systems. Frequently, for example, the findings based on this procedure cannot be replicated (Kazdin, 1980). While this problem is not unique to an investigation of the triple response model (e.g., Epstein, 1979; Greenwald, 1975), it has certainly hindered progress toward making general principles regarding this model.

The inability to replicate the findings of studies examining the relationship among response systems may be due to several factors. For example, even when assessment settings appear to be consistent, they may be subtly different. Also, behavior within and between individuals may change over time and across situations. Finally, since individuals are often not examined over time or across situations, a nomothetic analysis does not permit a reliable generalization over these dimensions, particularly at the level of the individual. As such, the predictive power of such an analysis is often poor since there is rarely information regarding the pattern of responding for an individual or for the group.

An example may clarify these points. Let's say that six subjects' responses on a self-report measure of anxiety were two, seven, four, seven, eight, and nine (on a scale of 1-10). On a physiological measure of anxiety, also on a scale of 1-10, the responses of these same six subjects were ten, six, three, four, six, and seven, respectively. The profile of each subject is shown in part A of Table 1. The analysis of these data, using Spearman's rank difference correlation procedure, yielded a nonsignificant correlation coefficient (rho = -.10). On the basis of this analysis, it seems that the two systems (verbal and physiological), or the two measures (self-report and physiological) failed to covary or that they are "desynchronized." A given subject may be described as performing high or low on one measure as compared to his performance on the second measure. It may be concluded with some degree of caution, that since the two systems do not correlate, there is a need to assess

Table 1

Simulated Data To Show The Usefulness
Of Examining Data Idiothetically

Part A

	Verbal Measure	Physiological Measure
S1	2	10
S2	7	6
S3	4	3
S4	7	4
S5	8	6
S6	9	7

Part B

	Verbal Measure				Physiological Measure			
	1	2	3	4	1	2	3	4
S1	2	4	2	4	10	7	9	7
S2	7	10	8	10	6	7	5	7
S3	4	3	3	3	3	2	2	2
S4	7	6	5	4	4	3	2	1
S5	8	1	10	10	6	9	2	2
S6	9	10	10	8	7	8	8	6

both systems in anxiety.

The information extracted from the group or nomothetic level of analysis seems quite limited. Specifically, in a nomothetic analysis, information regarding the relationship among systems for an individual is absent. Furthermore, while it is important to know the relationship among systems at a given point in time, it seems just as important to know the patterns displayed by subjects over time and/or situations. This might aid in determining the stability or the instability of a relationship.

One might argue that these problems are not the result of collapsing data across subjects per se, but rather are due to one shot sampling vs. sampling over time and/or situations. This argument is quite apparent in recent literature. For example, in order to examine the relationship between data derived from self-observation (e.g., standard personality inventories) and from objective behavior, Epstein (1979) had subjects keep records on their most pleasant and unpleasant experiences everyday for one month. The correlation coefficient for a one day sample with any other one day sample was frequently below .30. However, when the mean of all odd days was correlated with the mean of all even days, the correlation between the two measures for pleasant events was .88 and .79 for unpleasant events. Similar findings were observed by Barry (1977; cf. Epstein, 1979) who investigated subjects' social and impulsive behavior in routine daily situations by having independent observers monitor subjects' behavior across eight items related to sociability and impulsivity. Observers monitored subjects' behavior for 14 days. A dimensional analysis for any one day sample yielded relatively low reliabilities. However, a vertical analysis (odd-even correlations) indicated that for at least six of the eight variables, degree of correlation increased as a function of the number of observations until a relatively high level, yet stable, reliability was obtained.

These studies stress the importance of sampling behavior over time and/or situations. The conclusion drawn from data procured in this manner may be quite different from that obtained from data of a single observation. In both studies, correlation coefficients based on data sampled across time were significantly higher than those based on a single assessment session.

It is quite clear from these studies that a nomothetic approach over time also offers valuable information. However, important questions remain unanswered. It is unclear, for example, why the correlation observed at one point in time is often quite different from that observed at another point in time even when the data are collected on two seemingly homogenous populations.

Another question prompted by the nomothetic approach is how between-subject variations in the level of responding affect the degree of correlation among measures. This question seems particularly important since it is well documented that individuals often show differential levels of responding across response systems (e.g., Barlow, et al, 1980; Geer, et al, 1974; Lang & Lazovik, 1963; Wolpe, 1978), and levels of responding often vary significantly between subjects. At the nomothetic level of analysis, within-subject patterns of responding, and levels of responding are totally confounded.

The phrase "level difference" is used throughout this manuscript. Its meaning in the present study differs somewhat from its usual connotation and thus a definition is in order. Typically, "level difference" refers to differences in the magnitude of the score that different subjects show on a given measure or set of measures. For example, on a scale of 1-10 on two measures (replies to "How aroused are you?" and actual physiological arousal), Kelly's level of responding might be an "8" and "12," respectively, while Jim's level of responding on the same measures might be at "4" and "8," respectively. Kelly's "level of responding" might be said to be greater that that of Jim's on these measures. "Level differences" in this traditional sense do not necessarily influence correlations when data are collapsed across subjects. In the current study, however, "level differences" refer to differences in the magnitude of the scores for different subjects when there are differences in the magnitude of the score on some measures for some subjects without corresponding differences on other measures. When data are collapsed in this case, correlation coefficients calculated on group data are likely to be attenuated.

Many of the problems encountered at the nomothetic level of analysis might be handled through an idiothetic approach. An idiothetic analysis involves a description of an individual's behavior made only on the basis of that individual's behavior, as opposed to a nomothetic analysis which involves a description of an individual's behavior made on the basis of aggregated data. It is important to note that the ultimate goal of each approach is to establish general principles regarding the relationship among response systems. Only the means of reaching this goal are different.

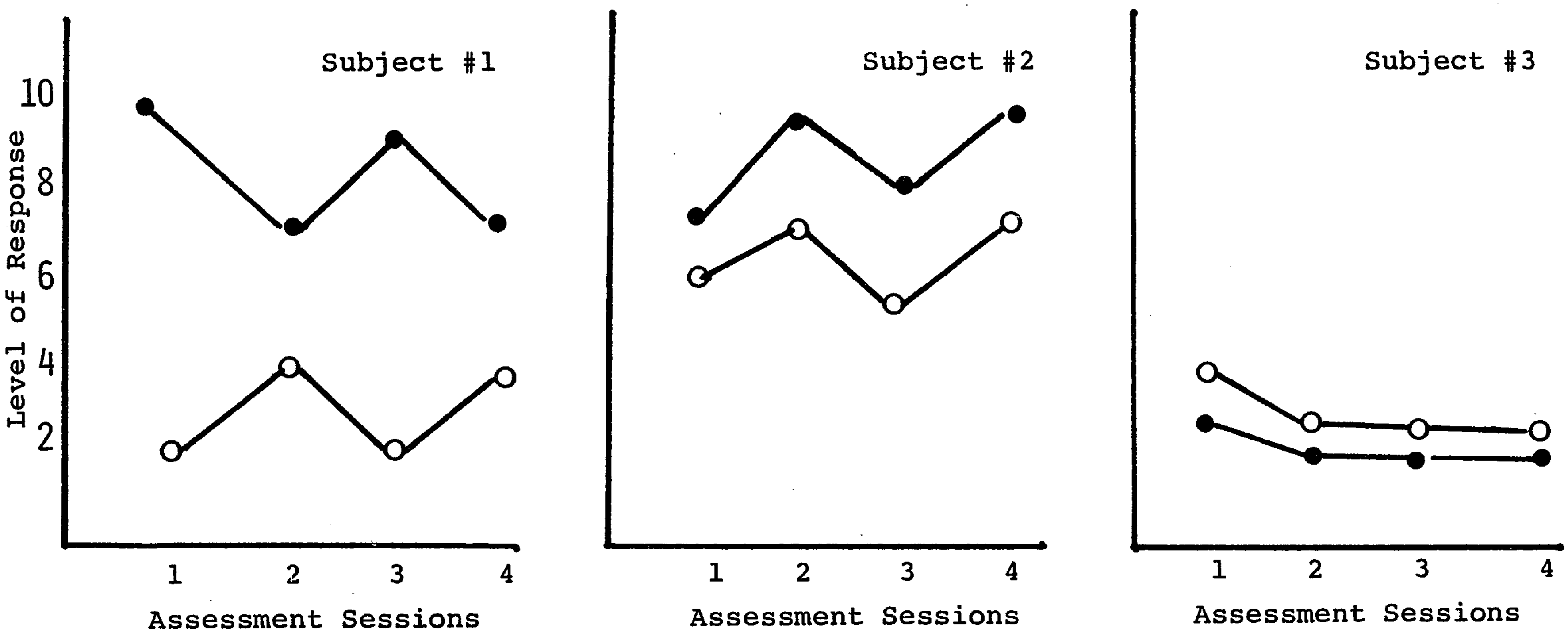
In an idiothetic analysis, for each subject, each response system associated with a particular behavioral class might be sampled at several points in time or across several situations. From this we might be able to determine not only the degree of correlation among response systems across subjects at a given point in time or situation as is done in a nomothetic analysis, but also the degree of correlation within subjects, across time or situations. Furthermore, it is quite possible that by examining the patterns displayed by individuals in an idiothetic analysis, we may be able to pinpoint those variables which make it difficult to replicate findings obtained in a nomothetic approach.

In order to clarify, it is necessary to expand the example used earlier. Let's say that the same six subjects were assessed at three other points in time across the same two response dimensions (verbal and physiological). The profile for each subject is shown in part B of Table 1.

In the earlier example, it was shown that the two systems, or the two measures are desynchronized. A correlation coefficient computed at each assessment session on data collapsed across subjects provides additional support for desynchrony among the two systems. Furthermore, when mean scores (average score across the four sessions for each subject) for the verbal measure were correlated with the mean scores for physiological measure, the degree of correlation between the two measures did not increase (.09) over and beyond that observed at each session.

As shown by the six within-subject graphs (see Figure 1), the two systems are in fact synchronized across time for each subject. There is a significant covariation between each measure. At this level of analysis one is able to predict with greater precision when given the changes in performance on one measure, how a subject will change on the second. When one response goes up so does the other (a positive correlation), or when one is down, the other is up (a negative correlation). Only the levels of each

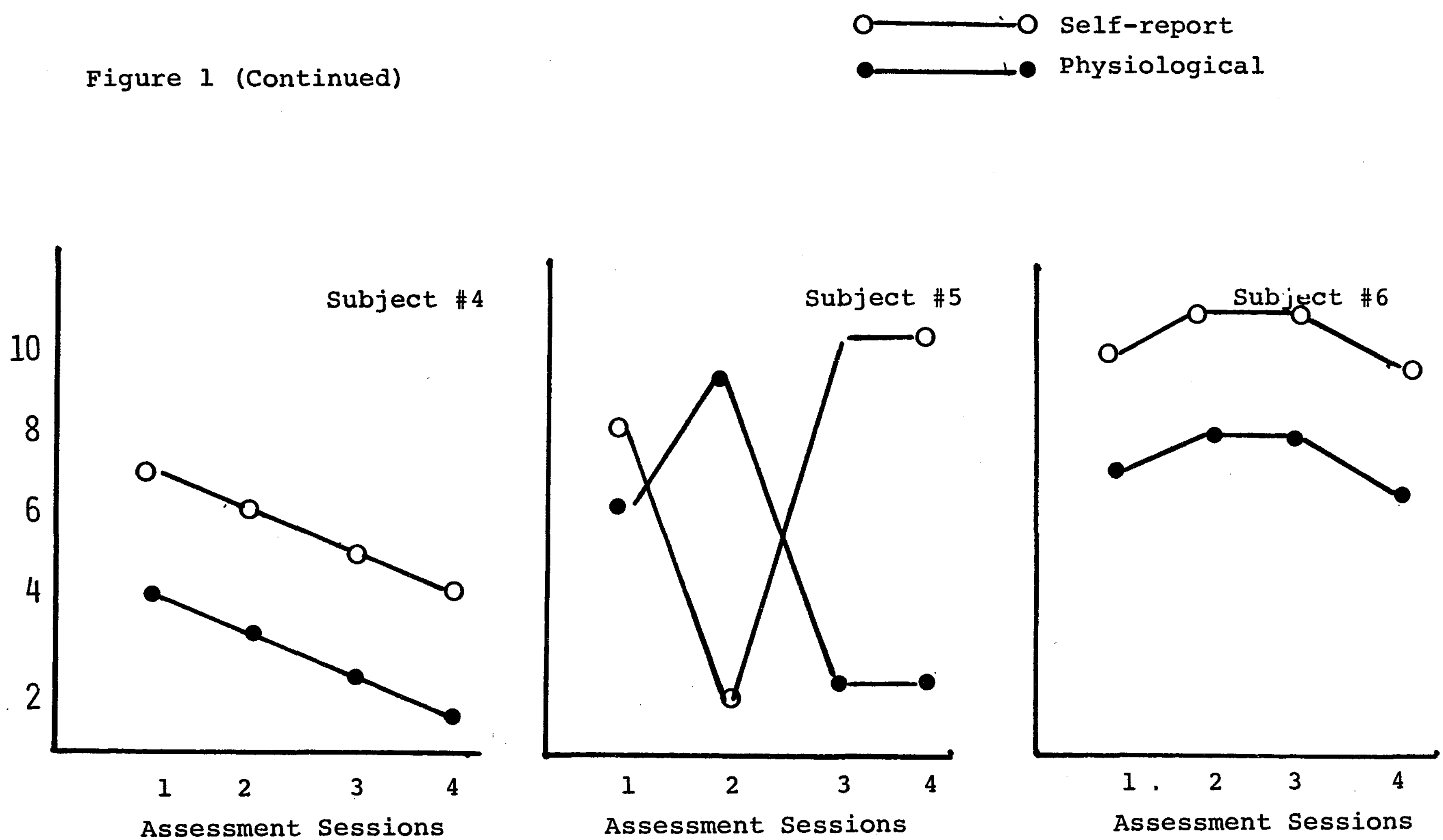
Figure 1



Simulated Graphs To Show The Usefulness

Of Examining Data Idiothetically

Figure 1 (Continued)



Simulated Graphs To Show The Usefulness

Of Examining Data Idiothetically

responses differ between subjects. The patterns or the correlation between these two measures remains relatively high. As mentioned earlier, these two dimensions (level and pattern) are confounded in a nomothetic analysis.

There is evidence in the personality literature which supports the usefulness of the idiothetic-nomothetic distinction in evaluating relationships among measures. For example, in a study examining the relationship between sadness and anger in everyday life, Epstein (1979) found that anger and sadness are positively correlated at the group level, but often negatively correlated at the individual level. Furthermore, correlations were quite varied at the level of the individual, with some subjects showing high positive correlations, and others showing high negative correlations.

The between-subject differences shown in Epstein's (1979) study are not new. This phenomenon has also been demonstrated in the behavioral literature. For example, in the simultaneous monitoring of heart rate and approach behavior during the treatment of nine phobic cases, Leitenberg, et al, (1971) found very different relationships between these measures across subjects. For some subjects the measures seemed highly correlated, while for other subjects the relationship between heart rate and approach behavior was either weak or unrelated. The patterns displayed by the two measures were quite diverse across subjects. For example, for some subjects when heart rate increased, approach behavior decreased. For other subjects the two measures showed a parallel decline, and for still others, approach behavior declined without any changes in heart rate. Similar results have been obtained by Barlow, et al, (1980). It is not clear how these diverse patterns of responding at the level of the individual are presented at the level of the group.

An idiothetic analysis of the relationship among response systems has both assessment and treatment implications. If it is determined, for example, that these systems do follow a relatively stable pattern over time and/or situations, then assessment might be less complicated since it might require fewer measures, or it might suggest the need for even further and more complicated assessment, depending on the pattern displayed across subjects. By understanding the conditions under which responses covary idiothetically, clues may be developed about how to design treatments that are effective in producing generalized results across responses.

The distinction between an idiothetic and a nomothetic analysis may be important in examining the relationship among response systems, especially in helping to understand synchrony and desynchrony among these systems. While there has been much discussion regarding this distinction (e.g., Allport, 1962; Epstein, 1979; Lamiell, 1981; Tyler, 1959), it has received little empirical attention in general, and none in relation to the triple response model. This is particularly interesting in the light of the advent of single-subject methodology (e.g., Hersen & Barlow, 1976; Leitenberg, 1974; Chassan, 1967), and the strong contention held by some behaviorists that behavior should, when possible, be sampled within the individual across time and situations.

Despite the verbal-cognitive recognition of this problem, it has not translated well into a motoric response. There are several reasons for this. We have a research history of beginning with the more general and ending with the specific. It may be easier to publish if our findings are based on the average across numerous subjects. Also our research designs are often dictated by the available statistical procedures, most of which require nomothetically analyzed data. The statistical tools for an idiothetic analysis, and for a nomothetic analysis based on an idiothetic analysis, are very few.

In summary, there are several important reasons for investigating the relationship among response systems idiothetically rather than nomothetically. Since the data of an individual are viewed separately from others in an idiothetic analysis, patterns established by individuals may be observed. This might clarify those variables which make it difficult to replicate findings based on group data. More important, an idiothetic analysis of response systems might allow for a closer examination of the effects of our independent variable on these measures. Since data are collapsed across subjects in a nomothetic analysis, it is unclear whether the independent variable merely influenced the level of responding on the various measures for some subjects, or in fact altered the relationship among these measures. Furthermore, it is this close examination of response systems that may aid in determining the conditions under which synchrony and desynchrony may occur. Finally, since in an idiothetic analysis response systems are sampled at several points in time, or across several situations for each subject, a reliable generalization over these dimensions may be possible.

Statement of the Problem

The status of the nomothetic approach in describing the relationship among response systems remains somewhat questionable. Findings based on this approach frequently cannot be replicated. It is not uncommon, especially in sexual arousal research, for measures to covary in one study, while showing a lack of covariation in another seemingly identical study. While it may not be the nomothetic approach which is responsible for the inconsistency in findings, this approach may have served as an impediment to isolating such variables.

Treatment selected on the basis of results obtained nomothetically often has differential outcomes for individuals. That is, it continues to be unclear what the relationship is between the findings at the group level of analysis, and the selection of a treatment for a particular individual within that group.

The terms (synchrony and desynchrony) used to describe the results of the group analysis imply that there is either a high relationship or a low relationship between two measures. However, it is unclear if these terms adequately describe the relationship between two measures since at the group level of analysis this relationship (the degree to which one measure changes as a function of the second measure) is confounded with level differences between individuals. Therefore, two measures observed to be unrelated at the group level of analysis when level differences may influence this relationship, may in fact be strongly related at the individual level of analysis when level differences are controlled. Recent evidence (e.g., Epstein, 1979; Lamiell, 1981) has pointed to a more idiothetic or single-subject approach as helpful in resolving these problems.

The present study employed an idiothetic approach in examining the relationship among three groups of measures. This analysis involved sampling physiological, subjective, and behavioral-motoric measures associated with sexual arousal over four assessment sessions for each subject in this experiment. Correlation coefficients based on data obtained across the four assessment sessions could then be computed for each subject or for all subjects as a group. Since the same number of subjects as would be included in a nomothetic analysis (across subjects) could also be included in an idiothetic analysis (within-subject across time), the present study allowed for a direct comparison of the two procedures within a single research design.

An idiothetic analysis may be carried out on any class of behavior, and across an indefinite number of assessment sessions. The present study, however, selected sexual arousal as the target behavior because it seemed particularly amenable to level changes. Also, sexual arousal contains a relatively well defined set of responses (e.g., erection). The number of assessment sessions was limited to four because anything less may have been insufficient in detecting a pattern, and anything beyond this may have introduced variables not controlled for in this experiment.

It was hypothesized that different analyses would result in different conclusions regarding the magnitude of correlation among these measures. It was expected that level differences between subjects would serve to lower the overall correlations among these measures at the group level of analysis (nomothetic approach), while having little or no effect on the correlations within-subject (idiothetic approach).

The hypothesis was predicated on the assumption that level differences both within and between subjects would be present in the data. It was possible, although unlikely, that all subjects would perform in the same manner. In such a case, the group level would have equalled that of the individual level; and, therefore, the major issues would remain obscured. Therefore, in order to ensure that level differences would occur between and within subjects, a public and a private condition were employed in this study. These terms (private and public) as used in the current study are somewhat different from their usual connotation. While this dichotomy often produces differential effects, recent evidence (e.g., Rosenfarb & Hayes, 1984) suggest that this division may not be as clearly defined as once thought. Specifically, because of factors which are arduous to control, it is often difficult to develop a truly private condition. For example, if a subject in a "private" condition merely thinks that there is the possibility of eventual social access of the behavior in question, or if the subject has set some previous criteria, either explicit or implied regarding the specific behavior in question which the experimenter is aware of, then the situation becomes public. Therefore, behavior observed in this "private" condition would be under similar, if not identical contingencies as that observed in a truly public group.

To use the private-public dichotomy, privacy often has to be re-defined from its usual meaning of lack of immediate audience or obvious surveillance. One solution to this privacy issue might be to set up a situation in which the subject is on his own. Specifically, this condition would be less public in that not only has the audience been removed, but the subject's expectations regarding the behavior in question has been minimized. A group of "private" subjects might be compared to subjects in a public condition whose expectations regarding the dependent measures have been maximized, and where the experimenter has intermittent visual and verbal contact with the subjects during the experiment. In the present study, this problem was handled in the following manner. For private subjects not only was the experimenter removed (subjects were presented instructions in written form), but also an effort was made to minimize each subject's expectations regarding his own performance. For public subjects an experimenter was present prior to and at the conclusion of each task. Also, an effort was made to maximize expectations by having subjects complete a form containing questions about his own sexual history prior to beginning the experiment. This form was completed in the presence of an experimenter.

It was expected that the public and private conditions would have differential effects on subjects' level of responding. It was predicted that these variables would have their influence on the physiological measures. This is because physiological measures are more sensitive, more likely to be associated with sexual arousal, and more likely to be influenced by setting. It should be made clear that it was not apparent a priori how these variables would influence level of responding on the various measures. Nevertheless, by also varying the social acceptability of the stimuli, certain speculations could be made. Specifically, a subject in the public group would be more likely to show arousal to a socially acceptable stimulus, while more likely to inhibit arousal to an unacceptable stimulus or one different from what he had said that he would be aroused to on the questionnaire. On the other hand, subjects in a private condition may be less interested in altering their arousal patterns no matter what the stimuli since no one is monitoring his performance. In order to vary the social acceptability of the stimuli, both male and female slides were included in the current study.

There is another important reason for including the public-private dimension in this study. This manipulation has been known to be quite powerful in influencing behavior in a variety of situations, including in the treatment of fear (e.g., Graziano, DiGiovanni, & Garcia, 1979; Kanfer, Karoly, & Newman, 1975; Rosenfarb & Hayes, 1984) in the use of coping statements (e.g., Zettle & Hayes, 1983), and in performance ability (e.g., Good, 1973; Seta & Hassan, 1980).

It seems highly plausible that this dimension will also have differential effects on magnitude of correlations in the current study. This seems particularly possible in light of the behavior under investigation. That is, one's sexual arousal would seem to be influenced by whether or not it is sampled in a public or private condition. Whatever the influence, one would expect it to appear for both analyses. Therefore, another reason for including the public-private dimension was to evaluate how the differences produced by this manipulation are presented at both the idiothetic and nomothetic level of analyses. Again, it was difficult to argue a priori how these variables would influence correlation. It could be argued, for example, that the higher correlations would be with the public subjects because of the social contingencies placed on consistency (I am aroused; therefore, I must report it). Conversely, in the private condition there may have been less of an attempt to suppress particular responses, and thus, the behavior might assume a more natural and consistent level and pattern.

In order to evaluate further the influence of the private-public manipulation on intercorrelations, both public and private subjects were selected randomly to participate in four additional assessment sessions. For the public subjects selected, the procedure for the additional sessions remained the same as it had been for these subjects during the initial four sessions. For private subjects, however, the procedure changed during the additional four sessions to match that of the public subjects. If these variables influenced intercorrelations, then during the additional four sessions where public and private subjects were the same, intercorrelations for public and private subjects would not be significantly different for the two groups.

Nine dependent measures (five subjective, two physiological and two motoric) were originally included in this study. However, for reasons which are discussed in Chapter 3, the two motoric measures were discarded from the analyses. The seven remaining measures allowed for a closer examination of Cone's (1979) multimethod, multicontent, multibehavior model. This model is predicated on nomothetic data, and on data obtained within a single assessment session. Given that this model may be useful in evaluating the quality of measures used in behavioral assessment, it would seem important to evaluate this model in the framework of the idiothetic-nomothetic debate.

CHAPTER II

METHODS

Design

The present study was designed to investigate the relationship among three classes of measures (verbal-cognitive, physiological, and overt-motor) associated with sexual arousal. The basic experimental design involved sampling measures from each of these three categories at four different assessment sessions. At each of these four sessions twenty subjects participated in three different experimental phases. During one phase, the verbal phase, three paper and pencil measures (predicted amount of arousal, predicted time to arousal, and predicted time of viewing) were completed while subjects viewed erotic photographs. During another phase, two physiological measures (amount of arousal and latency to arousal), and two paper and pencil measures (subjective units of arousal and attraction level) were sampled while subjects viewed erotic slides. This was the physiological phase. Subjects also participated in a motoric phase in which two measures of sexual preference (relative rate of responding and time spent responding) were assessed. The experiment was divided into phases in order to facilitate subjects' understanding of the experimental procedures.

It is important to note that this division was not an independent variable.

While all subjects participated in the four assessment sessions, half of them did so as private subjects and half as public subjects. Variations in the instructions and how these instructions were delivered to subjects distinguished public from private subjects. These conditions were included as a means of influencing level of responding. There was no way to determine prior to the experiment how, or if, this would occur. Also, to ensure that level differences would occur, erotic stimuli of both male and female were included.

Eight subjects (four private and four public) agreed to participate in four additional assessment sessions. These four sessions were identical to the first four sessions except that the private subjects now received instructions identical to those of the public subjects. The change for private subjects during the additional four sessions allowed for a closer examination of the influence of the public-private manipulation on response relationships.

The data were evaluated idiothetically (within-subject across the four assessment sessions), and nomothetically (between subjects, both within and across the four sessions).

Subjects

Subjects for this experiment were twenty male volunteers from the University of North Carolina at Greensboro. Subjects had responded to a poster requesting males between eighteen and thirty-five years of age to participate in a four hour sexual arousal study. This age range was selected because of the similarities in arousal patterns often shown among this group (Solnick & Birren, 1977). The mean age for the ten subjects assigned to the private condition was 21.3 (range: 18-31), and for the ten subjects in the public condition was 21.5 (range: 19-27). One subject in each group was married. All other subjects were single and had never been married. All subjects reported having had some experience with pornographic materials, and that they were not offended by such materials. None of the subjects reported a history of sexual problems, or emotional disturbances. A profile of each subject who participated in this study is shown in Appendix G-1.

Although subjects were informed prior to the experiment that they would view explicit sexual materials, they were naive as to the purpose of this investigation. Subjects received course credits for their participation in this study. Eight of the twenty subjects were asked to return after the first four sessions for four additional sessions. These subjects received course credits for their participation in the first four sessions, and $1.25 for each additional session.

Experimenters

The experimenters for this study included the principal investigator and six monitors.

The principal investigator was in direct contact with all subjects during the initial screening and at the beginning of each experimental session. He was responsible for obtaining a written consent (see Appendix G-2) from each subject, and for debriefing (see Appendix G-3) the subjects at the end of the experiment. The principal investigator was also responsible for training the monitors in the experimental procedures.

The monitors were all males and students of psychology. They either had been involved or were currently involved in a research project using human subjects. They were, however, required to read the standards employed by the American Psychological Association in the conduct of research with human subjects, and to sign a form as to having done this.

Materials and Apparatus

Slides and photographs were selected as the stimulus modality for this study. They have been shown to be effective in producing physiological sexual arousal in males without producing a ceiling effect (Abel, Barlow, Blanchard, & Mavissakalian, 1975). The slides and photographs were reproduced from sexually explicit magazines. There were two types of stimuli. One group was of nude females judged to be arousing by a group of ten heterosexual males not participating in this experiment. A second group was of nude males judged to be arousing by a group of five females not participating in this study. Only those slides and photographs which were rated six or better (on a scale of 1-7) were included in this experiment. This rating scale is shown in Appendix B-1. In order to vary the social acceptability of the stimulus materials, slides and photographs of both females and males were included.

Each slide and photograph employed in this study depicted the frontal view of either one white female or one white male. The stimuli were restricted to white females and males since research (e.g., Turner & Hayes, Unpublished Manuscript) has shown inconsistency between physiological arousal and verbal report of arousal for white males with non-white erotic stimuli. There were three slides and three photographs each of males and females. The same slides and photographs were used throughout this investigation.

An erotic film (8mm Connoisseur Series HH-113) was used in order to produce maximal physiological arousal for each subject. Erotic motion pictures have been shown to be successful at producing a full erection response in most males.

Whether the stimuli are in color or in black and white does not seem to make any difference in terms of the amount of arousal produced. However, since research (e.g., Rubin & Henson, 1979) has shown that subjects generally prefer stimuli that are in color, the film, slides, and photographs used in this study were all in color.

A penile strain gauge (Barlow, Becker, Leitenberg, & Agras, 1970) connected to a polygraph in an adjacent room was used to assess physiological sexual arousal. This assessment device has been used in a number of well controlled experiments (e.g., Barlow, 1973; Mavissakalian, et al, 1975) and has proven to be a reliable measure of physiological sexual arousal in males (Zuckerman, 1971).

A desk, chair, two slide projectors, and a screen were used in the motoric phase. A wooden box approximately 10x12x6 inches with two black buttons on top, approximately four inches apart, was mounted on the desk. These buttons were connected to electromechanical equipment located in an adjacent room. This apparatus contained timers which recorded the amount of time that a subject spent pressing a particular button, counters which recorded the number of presses on a particular button, and two concurrent variable interval twenty second tapes. The variable interval schedule was chosen on the basis of Fleschler and Hoffman's (1962) progression for generating variable interval schedules. These intervals were 1.5, 3.66, 6.50, 9.82, 13.90, 18.96, 25.75, 36.21, 69.94 seconds.

Dependent Measures

A total of nine dependent measures were taken for each subject. These measures were organized and selected to represent each of three classes of measures. There were five paper and pencil measures (subjective units of arousal, attraction level, predicted time to arousal, predicted amount of arousal, and the predicted time of viewing). Each of these measures are described below.

Subjective units of arousal. Immediately following the presentation of each of the six slides, subjects rated the slides according to how aroused he became while viewing it. A seven point scale was used with "1" standing for "no arousal" and "7" for "maximal arousal." This scale is described in Appendix A-1.

Attraction level. Immediately following the presentation of each of the six slides, subjects rated them on three bipolar Likert-type scales. The three scales, which are illustrated in Appendix A-2 were Friendly-Unfriendly, Unsexy-Sexy, and Beautiful-Ugly. Subjects rated each scale on 1-7 points. The layout of each scale was determined randomly as to avoid positional responding. The points on each scale did not always represent the same values. Therefore, following the completion of the survey, all scales were re-arranged so that the points had equal value across scales. For each subject an average score, based on responses to the three descriptive scales, was then computed for both the female and male slides. This average score defined the dependent measure attraction level.

Predicted amount of arousal. Each subject viewed the six photographs, one at a time in random order, and rated them on a seven point scale according to how physiological aroused he predicted he would become when the stimulus was shown later as a slide. In this case, "1" referred to "Definitely will not be aroused," while "7" to "I will become extremely aroused." This scale is illustrated in Appendix A-4.

Predicted time to arousal. Each subject viewed six photographs, one at a time, and rated them on a seven point scale according to the amount of time that would elapse prior to him becoming aroused to the stimulus in the photograph. On this scale "1" referred to "Immediately," while "7" to "two minutes or longer." This scale is shown in Appendix A-3.

Predicted time of viewing. Each subject also viewed the six photographs, one at a time, and rated them on a 1-7 point scale according to the amount of time that he predicted he would spend looking at a particular stimulus given a free opportunity to do so. On this scale "1" meant "thirty minutes or longer," while"7" referred to "No time at all." This scale is illustrated in Appendix A-5.

There were two physiological measures--amount of arousal and latency to arousal, and two motoric measures--rate of responding and time spent responding. These measures are described below.

Physiological measures. The penile strain gauge was used to assess physiological sexual arousal. During a two minute exposure duration of each of the six slides, two physiological measures of arousal were taken. Latency to arousal was defined as the amount of time between presentation of the slide and a 1mm pen deflection on the polygraph. Amount of arousal was partially defined as the greatest pen deflection within the two minute interval. The greatest pen deflection for each slide was compared to a maximal arousal measure (the greatest pen deflection at the time a subject reported that he was fully aroused), which had been obtained while each subject viewed an erotic film. A percentage score was then determined for each slide (greatest pen deflection for a slide/greatest pen deflection for the erotic film)(100). An average percentage score was then obtained for the three female and the three male slides at each assessment session.

Behavioral measures of preference. Two measures were derived from subjects' performance on a two key concurrent variable interval twenty-second schedule: relative rate of responding on either of the two keys, and relative time spent in either of the two conditions.

In summary, the nine dependent measures taken on each subject were organized to represent three classes of measures. These included the five verbal measures (subjective units of arousal, predicted time to arousal, predicted amount of arousal, predicted time of viewing), the two physiological measures (amount of arousal and latency to arousal), and the two motoric measures (rate of responding and time spent responding).

The dependent measures were also arranged to reflect the multicontent, multimethod, multibehavior model. The layout of this model, as applicable to the current study, is illustrated in Appendix E-1. The physiological system was assessed by self-report (predicted amount of arousal and predicted time to arousal), and by physiological recordings (amount of arousal and latency). It is important to note the layout for the physiological system. In going from self-report to physiological recordings only the method changed. The same content area (physiological), and the same specific behaviors within that content area were assessed by two different methods. Similarly, the behavioral-motoric system was assessed by both self-report (attraction level and predicted time of viewing), and direct observation (rate of responding, and time spent responding). Again, two behaviors, attraction level and time spent viewing, were assessed by two different methods; self-report and direct observation. The verbal-cognitive system was assessed by self-report only.

Procedure

Each subject was tested individually in the UNC-G Psychology Sexual Laboratory. Subjects were assigned randomly to the public and the private conditions, with ten subjects in each condition. The order in which subjects were assigned to each experimental condition was determined by the order in which a subject signed up for the experiment, and then by selecting his order of assignment from a box which contained all possible orders for the twenty subjects. The order in which subjects participated in each condition is shown in Appendix B-2.

The principal investigator met with each subject at the beginning of each experimental session. During the first of the four assessment sessions, the procedures were outlined and a signed consent form was obtained from each subject who agreed to participate in the study. The instructions as given to the subjects during the screening session are shown in Appendix C-1 and Appendix C-2 for the public and the private condition, respectively. For clarification, the major differences between these two conditions are outlined below.

Initial interview-private condition. The instructions for each experimental phase were presented to the private subjects in written form. These subjects were independent in that they did not see a monitor. The confidential and the private nature of this condition was stressed to these subjects at the beginning of each experimental session. These subjects were required to use a code number on every form that they completed, and, at the end of each experimental phase, deposit their completed forms into a sealed box. In the case of questions, these subjects were to ask only the principal investigator, and not any of the monitors who had direct contact with their data. Each private subject was informed that the monitor had been trained to carry out the experimental procedures, but he had little knowledge regarding the design of this study or the meaning of any of the data he was collecting. This was done in order to minimize each private subject's expectations regarding his own responses. Private subjects were not asked any questions about their sexual history, or sexual preference until the end of the last experimental session. At the end of the last session, each private subject completed the Sexual Orientation Survey. This survey is illustrated in Appendix G-3.

Initial interview-public condition. Subjects in the public condition were asked to complete the Sexual Orientation Survey at the beginning of the first experimental session. This survey was completed by the subject and then reviewed by the principal investigator in the presence of the subject. Each subject was introduced to two different monitors during the course of the four experimental sessions. The instructions for each of the three phases were given to these subjects orally by a monitor at the beginning of each phase. These subjects were informed that the monitors were knowledgeable of the experimental procedures and design;

and, therefore, all questions were to be directed toward the monitors. While these subjects were informed of the confidential nature of the experiment, this was mentioned only during the first experimental session. At the end of each phase, these public subjects were asked to give their completed forms to the monitors.

Experimental format. Each experimental session was divided into three phases (physiological, verbal and motor). The sequence in which subjects participated in each phase was determined randomly for each subject and for each experimental session. Each private subject was informed by the principal investigator at the beginning of each experimental session the order that he would participate in each phase. During each experimental session, public subjects were directed orally to each phase by a monitor. The order in which subjects participated in each phase at each experimental session is shown in Appendix B-3. Subjects were given the instructions for a particular phase at the beginning of that phase.

Each experimental phase was carried out in different rooms. However, the room for a particular phase remained constant across experimental sessions.

The physiological phase. During the initial part of the first physiological phase, subjects viewed segments of an erotic film projected on a screen directly in front of the subject while his sexual arousal was being monitored. The purpose of the film was to obtain a full erection measure for each subject, from which all other recordings were interpreted (erection measure on each slide/full erection measure)(100). Subjects were told to view the film while imagining himself interacting sexually with the subjects on the film. Once maximal arousal had been achieved, subjects were told to signal the experimenter by pressing a telegraph key which was located on the right arm of his chair. At this time, each subject in the public condition was asked by the monitor to place their code number on each form located on the table beside him. He was also asked to sit back and relax. Private subjects were asked (via written instructions) to read the second part of the instructions. Having subjects read the instructions and write a code number immediately after the film served as a distractor which was meant to decrease the amount of time between full erection and a return to baseline. Once baseline had been achieved, and subjects in the private condition had signaled that they understood the instructions, the physiological phase continued.

Each subject viewed six erotic slides, three of females and three of male. Each slide was projected onto a large screen located directly in front of the subject. The order of presentation for the six slides was determined randomly for each session, no more than two slides of females or males appeared consecutively. The order in which the slides were presented to each subject at each experimental session is shown in Appendix B-4. Subjects viewed each slide for two minutes. An exposure duration of two minutes was selected because research shows that longer exposure duration does not seem to produce erections significantly greater in magnitude than a two minute exposure (Abel, 1976). Immediately following the two minute exposure duration of a slide, public subjects were informed orally by a monitor, and private subjects were signaled by a buzzer to rate the slide. At this time subjects completed the Attraction Level Survey, and the Subjective Units of Arousal Scale while the slide continued to be projected onto the screen. Since it was subjects' immediate impression of the slide that was of interest, subjects were allowed sixty seconds to complete these measures. A blank slide then appeared on the screen for three minutes or until subjects returned to baseline, which ever was longer. Following the return to baseline, the second slide appeared on the screen and the cycle was repeated until the subject had completed the sixth form. At this time, public subjects were asked by the monitor to get dressed and to come out of the room. Once out of the room, these public subjects were given their physiological recordings and asked to place their code number on it. They then returned the recordings, their completed Attraction Level Survey, and the Subjective Units of Arousal Scale to the monitor. Once the last slide had been shown to private subjects, the projector went off. This was their cue to get dressed. Private subjects then had their physiological recordings pushed under the door of the laboratory. The subject placed his code number on this recording form and, along with his completed Attraction Level Survey and Subjective Units of Arousal Scale, dropped it in the sealed box located in the lab. The instructions for private and public subjects during the first session are shown in Appendix C-2 and Appendix C-5, respectively. The second, third, and fourth physiological sessions were identical to the first session for the public and the private subjects, except that during the last three sessions, subjects did not view a film. The instructions for the second, third, and fourth sessions for private and public subjects are shown in Appendix C-4 and Appendix C-6, respectively.

The verbal phase. During the verbal phase, each subject viewed six photographs and rated them on three different scales: Predicted Amount of Arousal, Predicted Time to Arousal, and Predicted Time of Viewing. Each scale was located in a separate folder and contained six forms, one for each of the six photographs. The order in which subjects rated each scale was determined randomly for each subject and for each experimental session. The order in which subjects rated the three scales is shown in Appendix B-6. In order to avoid positional responding, subjects were asked to shuffle the six photographs between each scale. The order in which subjects rated each photograph within each scale is shown in Appendix B-8. Subjects in the public condition were asked orally by the monitor to close each folder after completing all of the forms in it, and not to return to that folder. These public subjects gave their completed forms directly to a monitor at the end of the verbal phase. Subjects in the private condition, on the other hand, were asked in their written instructions to place their completed forms in the sealed box located in the room after completing each scale. The instructions for the verbal phase for subjects in both the private and the public conditions are shown in Appendix C-7 and Appendix C-8, respectively.

The motoric phase. Subjects were informed (orally by a monitor for public subjects, and in written form for private subjects) at the beginning of this phase that by pressing one of two buttons they could have a five second exposure to nine of eighteen erotic slides. Nine of the erotic slides were of females and nine were of males. Each set of nine slides was associated with a different button. This arrangement was consistent within sessions, but changed across sessions for each subject. For example, if female slides were associated with button A during experimental session one for a particular subject, then for session two, female slides may or may not have been associated with button A. The order of presentation of the slides on the two keys for each subject and session, is shown in Appendix B-10. While it was necessary for subjects to press one of the buttons in order to get access to a slide, the frequency, or the number of times that the button was pressed, was determined by each subject. Subjects could arrange to get exposure to all nine female slides, or all nine male slides, or a combination of both. The session was over when subjects had exposure to nine slides, or had ceased to press either button for fifteen minutes. At this time, public subjects were asked to come out of the room and to place his code number on the motoric data form. He then gave this form to the monitor. The motoric data form was pushed under the laboratory door for private subjects. These subjects placed their code number on this form prior to dropping it in a sealed box.

Assessment Intervals

With the exception of completing the Sexual Orientation Survey, the consent form, and showing the erotic film during the first experimental session, all sessions were identical for public subjects. With the completing of the consent form, and the showing of the erotic film during the first experimental session, and completing the Sexual Orientation Survey at the end of the last session, all of the first four sessions were identical for private subjects.

Four subjects from both the private and the public conditions were selected randomly to participate in four additional assessment sessions. The four public subjects selected to participate in these additional sessions continued the format as described for them during the first four sessions. The private subjects, however, continued the additional sessions as public subjects. All additional sessions were identical for all subjects, except that those subjects that had been private subjects, completed the Sexual Orientation Survey during the first of the additional sessions.

The average amount of time that elapsed between assessment sessions was two days. No subject was allowed to participate in more than one assessment session within a twenty-four hour period.

CHAPTER III

RESULTS

Data Transformation

For each subject, two average scores were computed for each of the dependent measures at each of the four assessment sessions. One score was based on subjects' responses to the three male slides, and the other was based on subjects' responses to the three female slides. For reasons which will be explained later, two of the nine dependent measures were dropped from the analyses. With the exception of amount of arousal, which was based on the average percentage of full erection, all average scores were determined from subjects' raw data. Prior to determining the average score for dependent measure attraction level, the three Likert-type scales making up this measure (see Appendix A-2) were recoded so that the points on all scales represented the same values; with "1" meaning less and "7" meaning more, depending on the scale in question. In order to make dependent measure latency to arousal more consistent with the other measures, for each slide time in seconds was converted to a 1-7 point scale with "1" meaning the longest latency, and "7" representing the shortest latency. The average score was based on these converted scores. The conversion table for latency to arousal is shown in

Appendix G-6. With the conversion of the latency scale to a 1-7 point scale, the higher ratings represented the more positive end of the continuum, while the lower ratings represented the more negative end for all seven dependent measures.

The Motoric Component

Two measures were obtained from subjects' performance on a two-key concurrent variable interval twenty-second schedule. These were relative rate of responding on two keys, and relative time spent responding on either of the two keys. Several problems were noted with this procedure which possibly contaminated the data derived from these measures. During the motor phase, subjects became quite efficient at determining the two schedules. For example, when subjects were asked during the debriefing, "What do you think was going on during the experiment," ninety percent of the subjects were aware that the amount of time allowed to elapse following the showing of a slide was more critical to seeing a second slide than the rate of lever pressing. One subject had written the schedule for one key on the experimental apparatus.

By the end of the second experimental session, most subjects could verbalize the purpose of this phase. This raises a question regarding the validity of this procedure in determining sexual preference. That is, since most of the subjects had reported heterosexual arousal, and reported that the females shown in the slides were attractive, one would expect a significantly higher preference for these slides. However, throughout most of the experiment, these subjects obtained access to both the male and the female slides in proportions of 5:4 and 4:5, indicating little preference for female over male slides. This lack of preference may be closely tied into a third problem noted with this procedure. Subjects frequently complained of boredom, and several subjects refused to continue this portion of the experiment during the last two sessions. It may be that since subjects were bored, they pressed to get access to any slide in order to terminate the session quickly. This seems particularly plausible in light of the fact that the session would be over once the subject had seen nine slides.

There was also a question regarding the reliability of the apparatus. During the course of the four experimental sessions, several subjects complained that they had not seen a slide when the projector came on. This did not correspond with the reinforcement counter which indicated that nine slides had been shown to each of these subjects. Checks of the apparatus failed to detect any problems, but since several subjects independently reported this, the possibility of unreliability cannot be overlooked. For this reason, relative rate of responding and time spent responding were dropped as dependent measures. As such, only seven dependent measures (five subjective and two physiological) were included in the analyses.

Strategy For Presenting The Data

The bulk and the complexity of the data dictate that the basic outline used in presenting the results be reviewed prior to discussing the data. The present study was designed to investigate idiothetically and nomothetically the relationship among several measures associated with sexual arousal. It was hypothesized that these two approaches would lead to different conclusions regarding this relationship. Specifically, it was hypothesized that both within and between subject variability, such as differences in the level of responding on these measures, would influence correlation at the group level of analysis, but not, at least not to the same extent, at the individual level of analysis. For this reason, the results begin by discussing the variability in the data.

After the sources of variability have been identified, the next two sections will describe both nomothetically and idiothetically the effects of this variability on the relationship among the seven dependent measures. The first of these two sections will describe the relationship among the dependent measures statistically. The second section will take a basic approach by examining pattern similarities/differences within-group, within-subject, and between group and individual.

A public and a private condition were included in the present study for two reasons. First, was to ensure that there would be variability in the level of responding on the various measures. This will be discussed in the section on variability. A public-private manipulation has been known to produce differential effects under various experimental conditions. It was because of this powerful effect that this dimension was included in the current study. It is important to know if, and how idiothetic and nomothetic analyses differ in identifying the effects of a public-private manipulation. The fourth section of the results will discuss the data relevant to this issue.

The final section of the results will examine some subsidiary issues. Of primary concern is the influence of variability on problems of replication at the nomothetical level of analysis, and also the influence of variability on Cone's (1979) model.

In summary, the results are divided into five components. The first will describe the variability in the data. The second and the third will describe at both the group and the individual level of analysis the effects of this variability on the relationship among the seven dependent measures. These two sections will explore the statistical or quantitative relationship among the seven measures, as well as the pattern similarities/differences among the measures. The fourth section will investigate, at both the group and the individual level of analyses, the differential effects of the public and the private conditions on subjects' responses to the male and female slides. The final section will examine two subsidiary issues (problems in replication and Cone's model) in light of the within and between session variability.

Variability In The Data: Level Differences

To reiterate, it was thought that the magnitude of correlation observed nomothetically would be different from that observed idiothetically. One reason proposed to account for this difference is level difference. That is, the level at which subjects respond on the various measures often vary both within and between-subjects. Therefore, when data are collapsed across subjects, as in the nomothetic analysis, the overall correlation may at times be attenuated. At the individual level of analysis, level differences alone may have little or no effect on the relationship between measures. Thus, the present study was designed in part to investigate systematically the effects of level differences on interresponse relationship. One reason why the public and the private conditions were employed in the current study was to ensure that level differences would occur.

In order to assess differences among mean level of responding, a 2 (public vs. private) by 2 (male vs. female) by 4 (sessions 1-4) multivariate analysis of variance involving all dependent measures, along with a univariate analysis involving each dependent measure, was performed on the raw data. The results of the MANOVA, and the corresponding analyses are shown in Appendixes D-1 and D-2. Wilks' Lambda criterion was used as the test of significance. The means for all significant effects are provided in Appendix D-3.

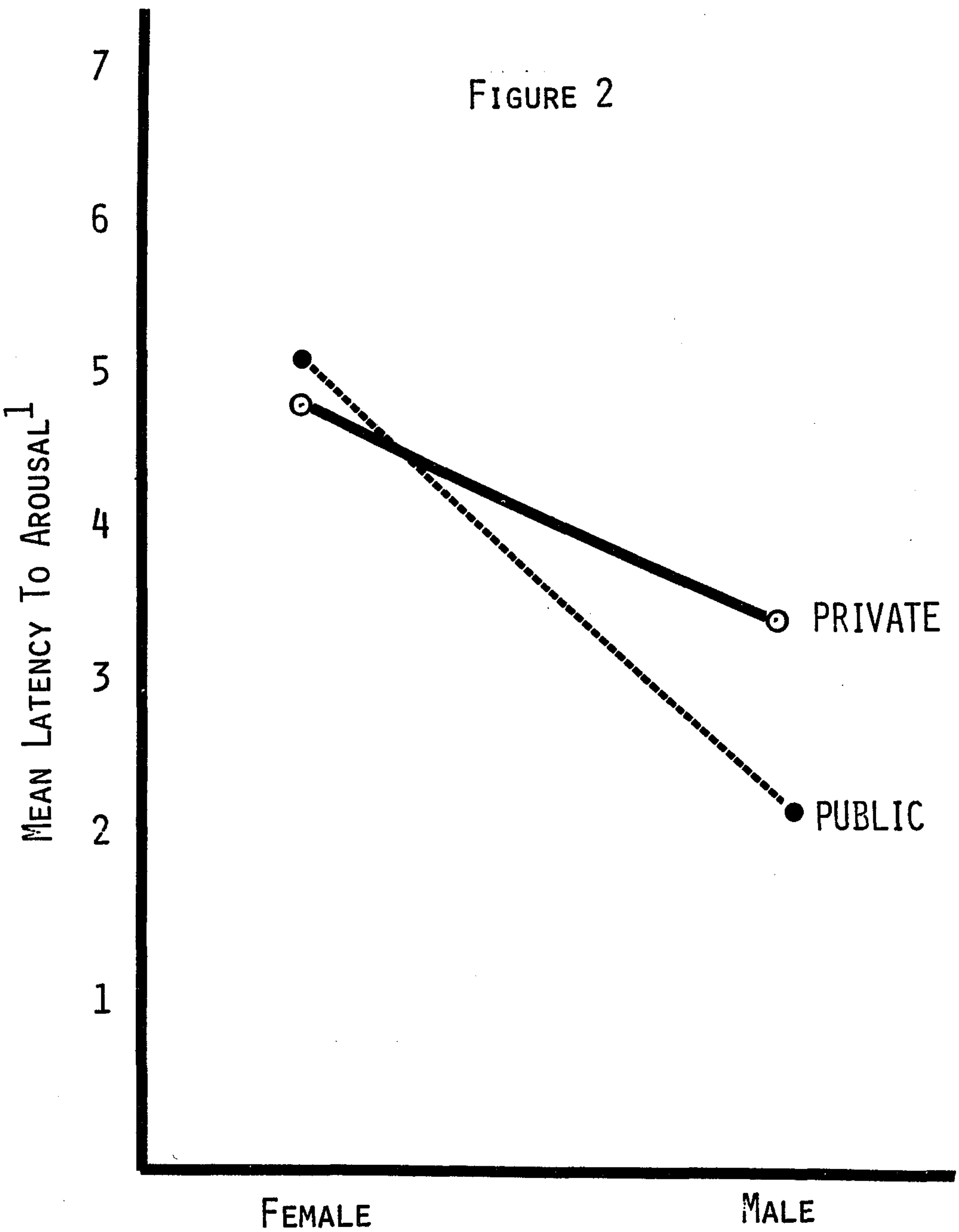
There was no overall group effect in the MANOVA, suggesting that the level of responding on the seven dependent measures did not differ for the public and the private conditions. However, it was predicted that subjects' responses on the physiological measures (amount and latency) would be most influenced by the public -private manipulation. This is because subjects may be less prone to inhibit physiological arousal to male slides in the private condition. An examination of the univariates performed on these measures revealed a significant group by stimulus effect for both latency to arousal, $\underline{F}$ (1, 18) = 4.42, $\underline{p} < .05$, and for amount of arousal, $\underline{F}$ (1, 18) = 3.53, $\underline{p} < .10$. In interpreting the data for latency to arousal, it is important to remember that subjects' performance on this dependent measure was recoded so that higher latency scores actually represent shorter latencies. As shown in Appendix

D-4, the Newman-keuls test performed on the significant group by stimulus interaction for latency revealed that public subjects took significantly longer to become aroused to the male slides as compared to the private subjects. For female slides there was no difference between public and private subjects on latency. The group x stimulus effect for latency is illustrated in Figure 2. The Newman-keuls performed on the group x stimulus for amount of arousal is shown in Appendix D-5. This indicates that private subjects were more aroused to the male slides than were public subjects. For female slides, however, there was no difference between the public and the private subjects on amount of arousal. This interaction is shown in Figure 3.

The MANOVA also revealed a significant stimulus effect, $\underline{F}$ (7,12) = 2026, $\underline{p} < .0001$. This significant stimulus effect was also observed for all seven univariates. As expected, subjects showed more arousal to female than male slides.

A significant effect was noted in the MANOVA for time, $\underline{F}$ (21, 138) = 1.73, $\underline{p} < .03$. This effect was also observed for the univariate performed on predicted time of viewing, $\underline{F}$ (3, 54) = 3.80, $\underline{p} < .10$. A Newman-keuls test performed on the raw data for predicted time of viewing revealed that subjects reported that they would spend more time viewing a stimulus during the first session than during the last session, but no differences among the first, second and third sessions (see Appendix D-6). Finally, there was a

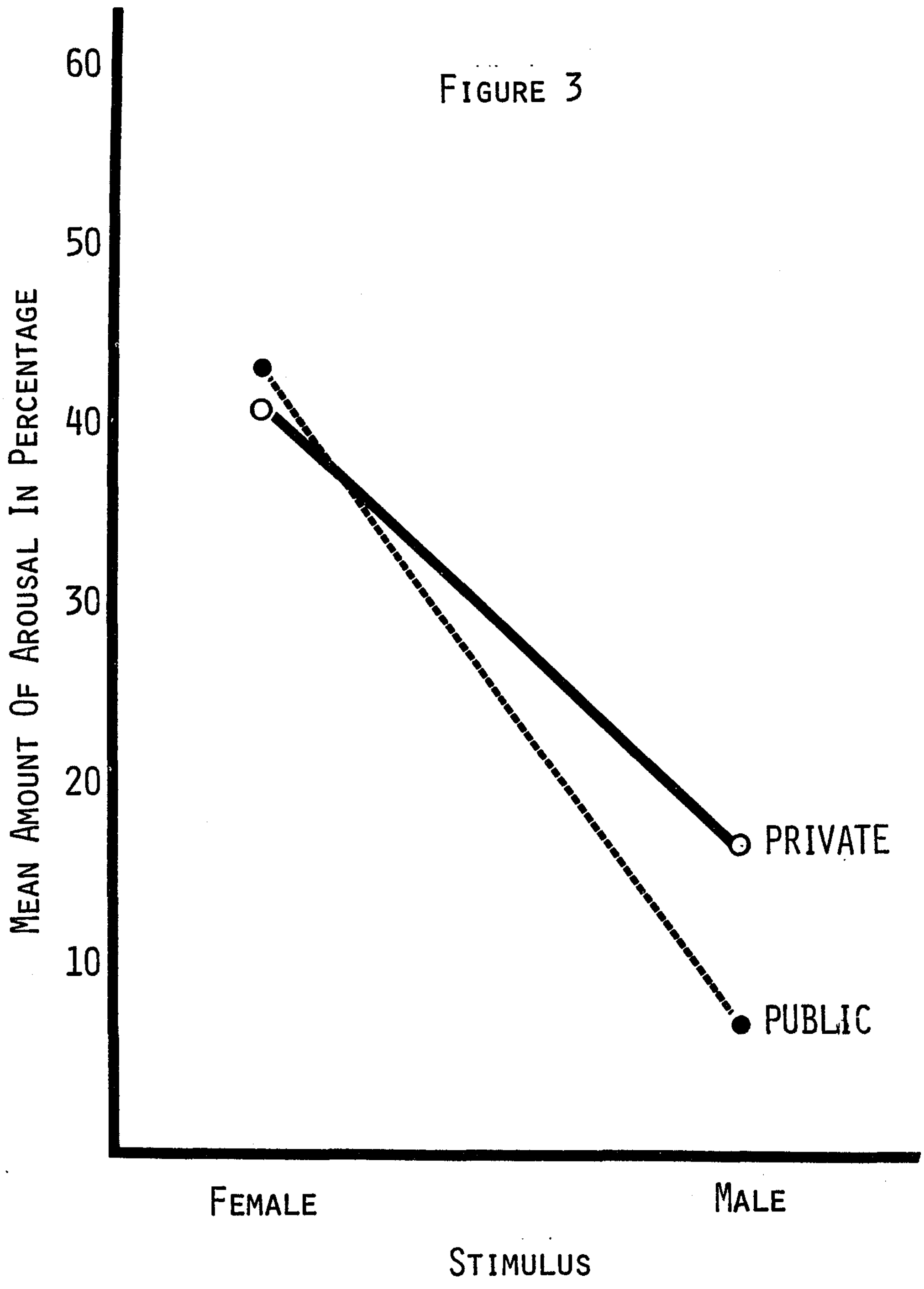
FIGURE 2



THE GROUP BY STIMULUS INTERACTION FOR
LATENCY TO AROUSAL

[1]HIGHER LATENCY SCORES ARE INDICATIVE OF LESS TIME TO AROUSAL.

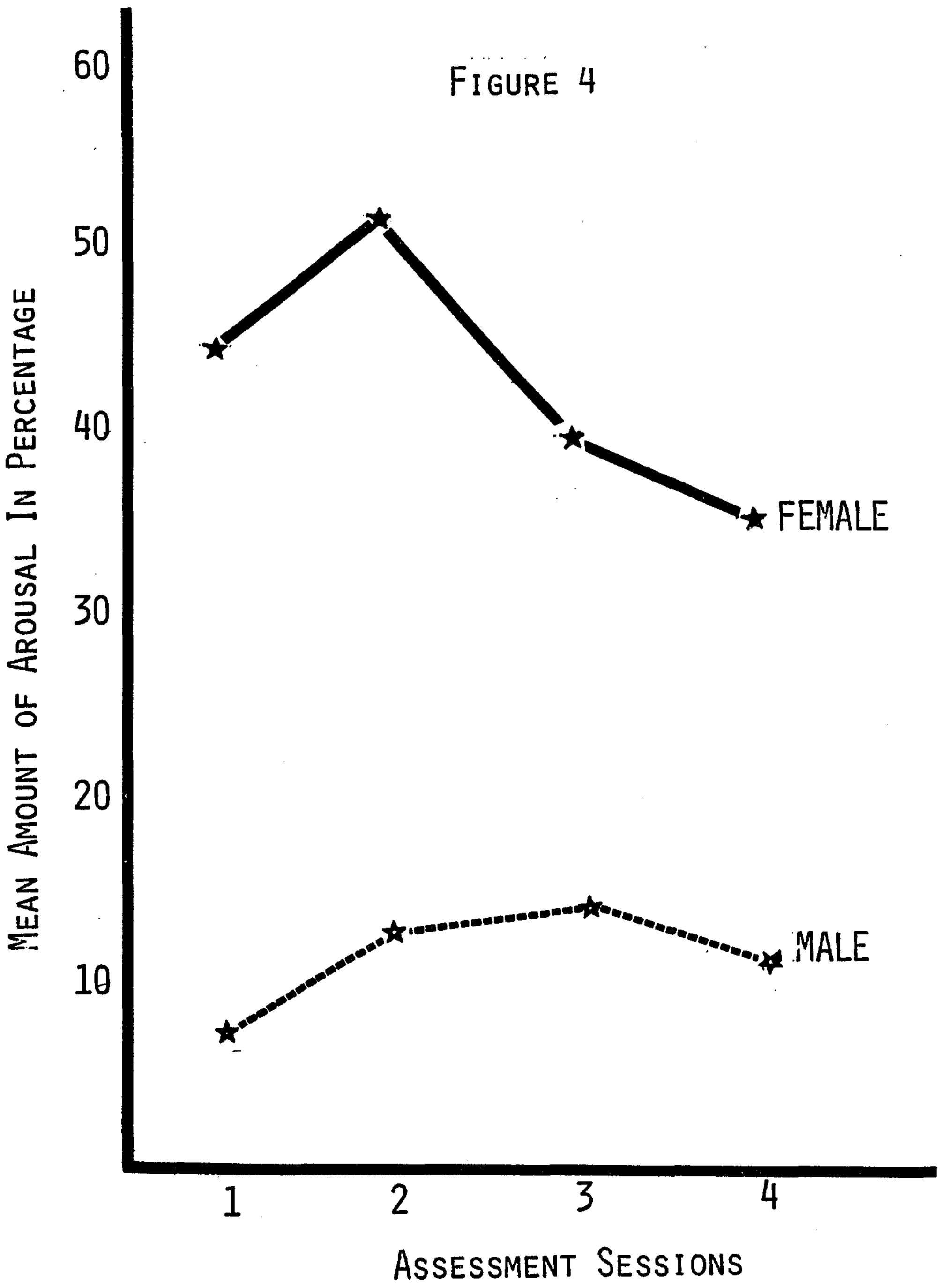
FIGURE 3



THE GROUP BY STIMULUS INTERACTION FOR AMOUNT OF AROUSAL significant stimulus by time effect for the univariate on amount of arousal, F (3, 54) 3.35, $p < .02$ (see Figure 4 and Appendix D-7). A Newman-keuls performed on this effect indicates that subjects showed more arousal to female slides during the first session than during the fourth session, but no differences among sessions one, two and three. As shown in Appendix D-6, the differences for male slides were not significant.

In summary, at least two sources of variability were identified in the current data. Subjects showed differential level of responding on amount of arousal, and latency to arousal. As expected, private subjects showed higher level of responding to male slides than did the public subjects.

Habituation was observed with both predicted time of viewing, and amount of arousal. Subjects showed the greatest decrement in performance on these measures during the final session. It was important to identify these sources of variability, especially the level differences, because of the prediction that such variability would produce a major difference between the group and the individual level of analyses. In the next sections, the effects of this variability on the relationship among the seven dependent measures will be examined in the framework of these two analyses.



THE TIME BY STIMULUS EFFECT FOR AMOUNT OF AROUSAL

<u>Pattern Similarities and Differences: Statistical Analyses</u>

In order to express quantitatively the extent to which these seven measures are linearly related, correlation coefficients were calculated at both the group and the individual level of analyses.

<u>Group level of analysis</u>. Spearman correlation procedure was employed at the group level. This procedure was employed on the raw data (mean scores) at each of the four assessment sessions, for each of the two experimental conditions, and for each stimulus class. When all seven dependent measures were correlated with each other, a total of twenty-one correlation coefficients were produced for both the male and the female slides. In order to determine the overall correlation among measures for each experimental condition at each of the four assessment sessions, an average correlation, based on these twenty-one correlation coefficients was computed. As shown in Table 2 for public subjects, the mean correlation for female slides was .51(range: .46-.53), and for male slides was .36(range: .29-.41). In the private condition, the average correlation for female slides was .44(range: .40-.46), and and for male slides was .58(range: .46-.60). For both female and male slides, only thirty-one percent of the correlations were at or above .50, suggesting that these measures are weakly related. It should be noted, however, that private subjects consistently showed a higher degree of correlation among the seven dependent measures across the four assessment

Table 2

The Average Correlations At The Group Level Of Analysis

Conditions	Assessment Sessions 1	2	3	4	Means	(Z)[1]
Public						
Female	.53	.52	.51	.46	.51	.56
Male	.29	.33	.41	.39	.36	.38
Private						
Female	.46	.46	.40	.42	.44	.42
Male	.46	.60	.59	.58	.58	.66
Public/Private						
Female	.44	.45	.45	.40	.44	.47
Male	.32	.54	.58	.57	.50	.55
Female/Male						
Female	.35	.37	.28	.38	.35	.37
Male	.50	.43	.46	.50	.47	.51
Public/Private and Female/Male	.33	.26	.27	.33	.30	.31

[1] This column represents the conversion of the mean score to a Fisher's Z.

sessions for male slides than did the public subjects.

A Spearman correlation coefficient involving data from the combined public and private conditions was computed at each assessment session. Data from both conditions were included in order to maximize the number of subjects (from 10 to 20 subjects) at each of the four assessment sessions. Also this was done in order to understand the effects of the level differences that was observed in the univariates for amount, latency, and subjective units of arousal with male slides on intermeasure correlations. As indicated in Table 2, the average correlations for female and male slides were .44 (range: .40-.45), and .50(range: .32-.58), respectively. These mean correlations do not appear to be a reduction from those observed when a Spearman was employed on the public and the private conditions separately. Moreover, for several sessions the magnitude of correlation increased when data from both conditions were combined. Furthermore, when data were collapsed across stimuli, or across all factors, the correlation coefficients were not very high. As shown in Table 2, when data were expanded across male and female slides, the mean correlations were .35(range: .28-.38), and .47(range: .43-.50) for public and private subjects, respectively. When data were expanded across both stimuli and conditions, the mean correlation was .30(range: .26-.33).

In summary, the average correlation coefficient (sixty-percent below .50) observed at each assessment session, suggest that the relationship among the seven dependent measures is weak.

Individual level of analysis. For each subject a Spearman correlation was employed on the raw data to determine the relationship among the seven dependent measures across the four assessment sessions for both the male and the female slides. For example, a subject's performance on one dependent measure at sessions one through four was correlated with the same subject's performance on another dependent measure at sessions one through four. When all of the measures had been correlated in this manner, a total of twenty-one correlation coefficients were available for each subject and stimulus. In order to determine the overall within-subject correlation for female slides, an average correlation coefficent based on the twenty-one correlation coefficients was computed for each subject.

Since many of the responses to male slides were identical for the verbal measures, degree of correlation among several of these measures could not be determined at the level of the individual. Therefore, only the four measures in which subjects consistently showed some variation were used to determine within-subject correlation for the male slides. The four measures used in this computation were amount of arousal, latency to arousal, subjective units of arousal, and attraction level, which produced a total of six correlation coefficients. The mean within-subject correlations for both female and male slides are shown in Table 3.

For the public subjects, the average within-subject correlations for female and male slides were .60(range: .41-.82), and .55(range: .31-.71), respectively. For private subjects, the average within-subject correlations for female slides were .72(range: .51-.93), and .73(range: .47-1.00), respectively. Eighty-five percent (34 of 40 correlations) of the average within-subject correlations were at or above .50.

A comparison of the correlations at the group with those at the individual level of analysis. When comparing the group correlations with the individual correlations, the most apparent difference between the two approaches is that the individual level invariably yielded higher correlation coefficients. While thirty-one percent of the average within-subject correlations (see Table 3) were at or above .70, not any of the correlation coefficients produced by collapsing data across subjects (see Table 2) reached this magnitude.

The correlation coefficients derived nomothetically were based on a different sample size than those derived idiothetically. That is, each correlation coefficient derived at the level of the individual was based on four data points (four assessment sessions), while each correlation derived nomothetically was based on ten data points (the contribution of ten subjects). It could be argued then, that any differences observed between the two analyses might merely be a

Table 3

The Mean Within-Subject Correlations And Their Corresponding Fisher's Z For Public And Private Subjects And Female And Male Slides

	Subjects	Female	(Z)	Male	(Z)
	1	.70	.87	.60	.69
	2	.57	.65	.71	.89
	3	.60	.69	.64	.76
	4	.51	.56	.48	.52
Public	5	.64	.77	.63	.74
	6	.82	1.16	.31	.32
	7	.40	.42	.53	.59
	8	.41	.44	.58	.66
	9	.55	.62	.49	.54
	10	.81	1.13	.57	.65
Means		.60	.73	.55	.63
	11	.65	.78	.64	.76
	12	.69	.85	.50	.55
	13	.86	1.29	.92	1.59
	14	.87	1.33	1.00	2.65
Private	15	.93	1.66	.75	.97
	16	.51	.56	.97	2.09
	17	.56	.63	.96	1.95
	18	.86	1.29	.44	.47
	19	.53	.59	.47	.51
	20	.69	.85	.68	.83
Means		.72	.98	.73	1.24

function of the difference in the number of data points employed in each analysis.

There are two possible solutions to this problem. One is to increase the number of assessment sessions to ten at the individual level of analysis. This tactic, however, would probably have given rise to a high dropout rate among subjects. A more feasible solution seems to be to decrease the number of data points in each group to four.

In order to make the comparison between idiothetic and nomothetic data more genuine, four subjects were randomly selected from each of the four experimental groups (public female and male; private female and male). Data from these four subjects became the four data points employed in determining relationships among the seven dependent measures. Once the twenty-one correlation coefficients had been determined at each assessment session, an average score was then computed for each session. Once this had been completed, the procedure was repeated with four more subjects (also selected randomly) from the same experimental group. The average scores (one score for each of the two groups of four subjects at each assessment session) were averaged at each of the four assessment sessions, and then across the four assessment sessions. The mean scores for both nomothetic and idiothetic data were both now based on eight data points. As shown in Table 4, the correlation coefficients continued to be higher at the level of the individual than at the level of the group, with the

Table 4

Idiothetic versus Nomothetic Means[1]

	Public		Private	
	Female	Male	Female	Male
Idiothetic	.64(.76)	.59(.68)	.74(.95)	.74(.95)
Nomothetic	.59(.68)	.58(.66)	.60(.69)	.58(.66)

[1]The number in parentheses represents a Fisher's Z.

greater differences observed for private subjects. Due to the unavailability of proper techniques, these descriptive differences were not statistically evaluated.

Pattern Similarities and Differences: Descriptive Analyses

Another means of examining the relationship among dependent measures is simply to look at the patterns displayed by two measures across time. A mere graphic display, however, quickly becomes overwhelming. In the present section, various means were used to compare measurement patterns descriptively.

In this section, a pattern was defined as the total configuration or the geometric form a measure takes across the four assessment sessions. Two patterns were judged similar if determined that changes in the data for one measure across the four assessment sessions, are associated with similar changes in the second measure across the same four assessment sessions.

Pattern coding. The method of pattern coding described the direction of changes across the four assessment sessions. At each session, a measure was described as either higher or lower depending on its position relative to the preceding assessment session. For example, if a subject scored 4, 6, 7, and 6 on a given dependent measure at assessment sessions one through four, respectively, then the pattern description of this measure was higher, higher, and lower, respectively. Since a decision regarding session one could only be based on the position of the measure relative to that in session two, it would be redundant with session two, and was therefore not coded. Decisions regarding sessions two through four were based on the position of the measure relative to the position of the measure in question. In the example, the level of responding in session two is a "6" and is higher relative to the "4" in sesssion one. The "7" in session three is judged higher relative to the "6" in session two, while the "6" in session four is judged lower relative to the "7" in session three. Because each session was judged relative to another session, two identical sessions could be judged differently depending on their position in the sequence of sessions, as in the case of the the two "6's" in the above example.

For the sake of clarity, sessions judged lower were assigned a one (1), and sessions judged higher were assigned a two (2). Therefore, instead of reading the above example as higher, higher, and lower, it was coded as 2-2-1 for the dependent measure. This code was used to compare one measure with another measure. For example, if a subject scored 60, 79, 80, and 50 on amount of arousal for sessions one through four, respectively, the code for amount of arousal was 2-2-1. This is identical to the code for the earlier measure; therefore, the two measures are judged identical in patterns. In the case of a tie (performance at all four sessions was identical), each session was judged lower and was coded "1." For example, if a subject scored 60, 60, 60, and 60 at the four sessions, then the code for that measure would be 1-1-1.

Utilizing this coding strategy, the next two sections will look at the effects of the variability discussed in the previous section on pattern similarities-differences among the seven dependent measures. This will be discussed first in terms of the group level patterns, and then in terms of the within-subject patterns.

Group level of analysis. Figures 1-4 in Appendix E-3 represent the patterns for public subjects, female and male slides; private subjects, female and male slides, respectively. Each data point is based on the average score for each dependent measure collapsed across subjects at each of the four assessment sessions. The average scores are shown in Appendix D-8. For the sake of clarity and for comparison purposes, amount of arousal, which is a mean percentage score (located on the right vertical axis of each figure) was graphed with the other six measures, which are mean scores based on a 1-7 point scale (located on the left vertical axis of each figure). Prior to examining the graphs, the reader is advised to study the legend in Appendix E-2, which clarifies the symbols employed in all of the graphs. The code for each measure within each group is shown in Appendix E-4.

Figure 1 represents the patterns displayed by the public subjects to female slides. As shown in Appendix E-4, there are three distinct patterns in this figure. Specifically, identical patterns were observed for latency to arousal, subjective units of arousal and predicted time to arousal (2-2-1). The pattern displayed by amount of arousal (2-1-1) is the reverse of the pattern displayed by attraction level (1-2-2). This reverse relationship is referred to as a negative correlation. An identical pattern was also observed for predicted time of viewing and predicted amount of arousal (1-2-1).

The patterns exhibited by public subjects to male stimuli are illustrated in Figure 2. Here, amount of arousal, predicted amount of arousal, and predicted time of viewing are identical (1-2-1), and just the reverse of attraction level (2-1-2). Also, latency to arousal (1-2-2) correlated negatively with predicted time to arousal (2-1-1). Subjective units of arousal (1-1-1) is unique in its pattern display.

Shown in Figure 3 are private subjects' responses to female stimuli. As shown, amount of arousal is identical in pattern to subjective units of arousal, attraction level and predicted time of viewing (2-1-2). Latency (1-1-1), predicted amount of arousal (2-1-1), and predicted time to arousal (1-1-2) were all unique in patterns.

Figure 4 depicts the patterns displayed by private subjects to male stimuli. As shown, amount of arousal is identical to predicted amount of arousal (2-1-1). Subjective units of arousal is identical to attraction level (2-1-2) and the reverse of latency, predicted time to arousal and predicted time of viewing (1-2-1).

When patterns were examined separately for each stimulus and each experimental condition, the number of identical patterns within each group never involved more than four (3, 4, 4, and 3 for Figures 1-4, respectively) dependent measures. In the remaining three graphs (see Figures 5-7 in Appendix E-3), the data were grouped first by the public-private dimension, and then by stimulus type.

Figure 5 shows the patterns produced when data are collapsed across the public and private subjects for female slides. For this group, subjective units of arousal, amount of arousal, and predicted time of viewing were identical in patterns in that subjects showed a decrease in performance from session two to session four (2-1-1). Also identical in patterns were predicted amount of arousal and attraction level (1-1-2). Latency to arousal and predicted time to arousal were identical in patterns (1-1-1).

Depicted in Figure 6 are the patterns for male slides collapsed across the public and the private conditions. As shown, amount of arousal (2-2-1) is the reverse of latency to arousal (1-1-2). Predicted amount of arousal and predicted time to arousal (1-2-1) were identical. Predicted time of viewing (2-1-1) and attraction level (1-2-2) were the reverse of each other. Subjective units of arousal was unique in its pattern. It is important to note here that the number of similar patterns did not decrease over and beyond the number of similar patterns in the other groups. In light of the significant difference in level of responding between the public and the private subjects to male slides, it was expected that this group would show fewer pattern similarities as compared to the other groups.

When data were collapsed across all independent variables (stimuli and conditions), four different patterns emerged. As shown in Figure 7, subjective units of arousal was identical in pattern to predicted time of viewing (1-1-1). Predicted amount of arousal and attraction level were identical (2-1-2), and just the reverse of predicted time to arousal (1-2-1). Both latency to arousal (1-1-2), and amount of arousal (2-1-1) were independent in this group.

Presented in Table 5 is a summary of the data appearing in Figures 1-7 (the actual patterns). Table 5 focuses on patterns similarities for each group. The columns are descriptions of the measures which have the same or a negative pattern in relationship with the patterns of another measure. If two measures are labeled "same," for example, that means that the patterns presented by both measures are identical to each other across the four assessment sessions, when one measure went up so did the other, and vice versa, when one went down, so did the other. "Neg" means that there was a reverse trend from one measure to the other; when one went down, the other went up or when one went up, the other went down. An example should aid in reading Table 5. In the first column labeled "Public/Female," amount of arousal and

Table 5

Pattern Similarities For Each Group

Measures	Public		Private		Public/Private		All Factors
	Female	Male	Female	Male	Female	Male	
Amt/Lat						Neg	
Sua			Same		Same		
Paa		Same		Same			
Pta							
Ptv		Same	Same		Same		
Alt	Neg	Neg	Same	Neg			
Lat/Sua	Same						
Paa							
Pta	Same	Neg		Same	Same		
Ptv				Same			
Alt							
Sua/Paa							
Pta	Same						
Ptv			Same		Same		
Alt			Same				Same
Paa/Pta					Same	Same	Neg
Ptv	Same						
Alt		Neg					Same
Pta/Ptv				Same	Same		
Alt							Neg
Ptv/Alt			Same			Neg	
Number of Differ Patterns	3	3	4	3	3	4	4
Number of Same Patterns	3	4	4	3	3	2	3

attraction level are labeled "Neg," while latency to arousal and subjective units of arousal, and latency to arousal and predicted time of arousal are labeled "Same." Also in the same column, predicted amount of arousal and predicted time of viewing are labeled "Same." This means that the patterns for, say latency to arousal and subjective units of arousal, were identical across the four assessment sessions at the group level of analysis, while amount of arousal and attraction level are inversely related. In the lower portion of each column of Table 5 are two numbers. The upper number represents the total number of different patterns observed for each group, while the lower number represents the highest number of measures that had the same pattern for that group. For column one, Public/Female, there were three different patterns for this group (see the row labeled Number of Different Patterns), and of these three patterns, no more that three measures had the same pattern (see the row labeled Number of Same Patterns).

Several factors are clear as a result of exploring patterns nomothetically. First, the number of consistent patterns within each group are few. With the exception of Public/Male and Private/Female, each of which involved four similar patterns, there was never more than three measures that were consistent within each group. Specifically, the number of similar patterns observed among these seven dependent measures are few when male and female slides, and public and private subjects are viewed separately, as well as when data are collapsed across these variables.

As revealed by the group patterns, the effect of the differential level of responding on the patterns is unclear. When data were collapsed across the two groups that had shown the greatest difference in level of responding (public and private subjects for male slides), the number of identical patterns were not significantly reduced beyond the number of similar patterns for the other groups. This is illustrated in Table 5.

The group level of analysis suggest that predicted time of viewing is the one best predictor of the patterns of the other six measures. As evidenced by a frequency count of the number of identical patterns observed across the four groups (Figures 1-7), the patterns of predicted time of viewing was very likely to be identical to at least one of the other measures in each group.

The within-subject patterns. The within-subject graphs are shown in Appendix E-5. The same coding strategy employed with the group patterns was also used in coding the within-subject patterns. The code for each measure within-subject is shown in Appendix E-6. Each graph was assigned to a specific category because of a common factor (similar patterns) that it shared with another graph. Five categories were produced in this manner, including (1) within-subject graphs in which the patterns displayed by all seven dependent measures were identical, (2) within-subject graphs in which the pattern of one measure deviated from the patterns of the other six measures, (3) within-subject graphs in which the patterns of two measures were disconcordant with each other and inconsistent with the other five measures, (4) within-subject graphs in which three patterns were unrelated to each other and unrelated to the other four measures, and (5) within-subject graphs in which several different patterns existed, but each pattern was related to at least one other measure. The within-subject patterns are described according to these five categories. Assignment of a graph to a particular category was made without respect to experimental conditions or stimulus class. Summarized in Appendix E-7 is the percentage of graphs which fall into each of the five categories.

The first category represents the within-subject graphs in which the patterns were all consistent across the seven dependent measures. The patterns of eight subjects were included in this category; seven (Subjects 1, 5, 10, 13, 14, 15, and 17) were based on responses to the female slides, and one (Subject 12) was based on responses to male slides. With the exception of the patterns for Subjects 14 and 17, the within-subject patterns are self explanatory. That is, for these subjects, all of the patterns are similar in geometric form in that when one pattern is up, they are all up, and vice versa, when one is down, they are all down. The within subject patterns for subjects 14 and 17 are different from the patterns of the other subjects in this group in that they are similar not because of their geometric form, but rather because of their predictive quality. That is, they are correlated negatively. For example, for Subject 14, female slides, amount of arousal, latency to arousal, attraction level, and subjective units of arousal have an identical form (2-1-2). The other measures, predicted amount of arousal, predicted time to arousal, and predicted time of viewing are identical in form to each other (1-2-1), but differ from the form of amount of arousal, latency to arousal, etc. However, because the patterns produced by the latter measures are just the reverse of the forms produced by amount of arousal, latency to arousal, and so on, the pattern for one can be used to predict the form of the other; therefore, the two patterns are judged similar.

Depicted in the second category are the graphs in which the within-subject patterns were harmonious across all of the dependent measures except one. For eight of the sixteen graphs included in this category, the within-subject patterns were similar across all measures, except for predicted time of viewing. These eight graphs included the responses of Subjects 2, 3, 6, 7, and 16 to female slides, and the responses of Subjects 4, 14, and 18 to male slides. One subject (13) showed a deviate pattern on predicted amount of arousal for male slides, while seven other subjects (4, 11, 18, and

20 to female slides, and 15, 16, and 20 to male slides) showed a deviate pattern with attraction level.

Characterized in the third category are the graphs in which two within-subject patterns were inconsistent with each other as well as with the other five within-subject patterns. Sixty-three percent of the deivate patterns were based on subjects' responses to male slides (Subjects 2, 3, 9, 11, and 17), while thirty-seven percent were based on subjects' responses to female slides (Subjects 8, 9, and 19). Of the deviate patterns, nineteen, twenty-five, nineteen, twelve, and twenty-five percent were with subjective units of arousal, predicted amount of arousal, predicted time of viewing, and attraction level, respectively.

Category four represents the graphs in which three within-subject pattern showed disconcordance among themselves as well as with the other four patterns. The five within-subject graphs included in this category were all based on subjects' responses to male stimuli (Subjects 6, 7, 8, 10, and 19).

Shown in the final category are the within-subject graphs in which there were two or more different patterns within each graph and not one of these can be used to predict the other patterns. For example, there were three different patterns observed for Subject 1 (male slides). For that subject, predicted amount of arousal, predicted time of arousal, and subjective units of arousal shared an identical pattern

(1-1-1). Attraction level and predicted time of viewing were identical (2-1-1). The pattern for amount of arousal was identical to the pattern for latency to arousal (1-2-1). These within-subject patterns were different, however, because one set, say attraction level and predicted time of viewing, can not be used to predict another, say amount of arousal and latency to arousal. Three graphs were included in this category; two based on responses to male slides (Subjects 1 and 5), and one based on responses to female slides (Subject 12).

To summarize, several features are clear as a result of exploring the within-subject patterns. Table 6, which represents the percentage of the total number of deviations in which the pattern of each dependent measure deviated from the other six measures in each of five categories, is presented to highlight these features. For example, there were sixteen within-subject graphs (nine for the female slides and seven for the male slides) included in category 2 where the patterns for each subject were consistent across all dependent measures except one. In this category, predicted time of viewing was the deviate pattern fifty percent of the time (thirty-one percent of the time for female slides, and nineteen percent for the male slides). For this same category, attraction level deviated forty-four percent of time (twenty-five percent for female and nineteen percent for male slides), while predicted amount of arousal was the deviate measure six percent of the

Table 6

The Percentage In Which The Pattern Of Each Dependent Measure Deviated From The Other Six Measures Within-Subject

Category	Stimulus	Number of Graphs	Amt[1]	Lat	Sua	Paa	Pta	Ptv	Alt
1	Female	7	0	0	0	0	0	0	0
	Male	1	0	0	0	0	0	0	0
2	Female	9	0	0	0	0	0	31	25
	Male	7	0	0	0	6	0	19	19
3	Female	3	0	0	6	6	13	6	6
	Male	5	0	0	13	19	6	6	19
4	Female	0	0	0	0	0	0	0	0
	Male	5	0	0	6	13	13	33	33
5	Female	1	0	0	0	0	0	0	0
	Male	2	0	0	0	0	0	0	0

[1]Amt - Amount of arousal
Lat - Latency to arousal
Sua - Subjective units of arousal
Pta - Predicted time to arousal
Ptv - Predicted time to viewing
Alt - Attraction level
Paa - Predicted amount of arousal

time. By defintion, category five could not have deviate measures since this category represented graphs in which several different patterns emerged, but each pattern was related to at least one other dependent measure. This accounts for why there are zero percentage deviation for all seven measures in category five in Table 6. One of the salient features shown in Table 6 is the high degree of consistency among the measures for female slides as compared to the male slides. As shown, of the twenty-four graphs included in categories 1 and 2 (graphs with one or fewer pattern deviations), sixty-seven percent were based on responses to the female slides. Table 6 reveals that sixty-three, one hundred, and sixty-seven percent of the graphs shown in categories 3, 4, and 5, respectively, were of male slides. Categories 3 and 4 represent graphs that contained two or more unrelated patterns. It is also clear from Table 6 that as a group, the predicted measures were the poorest measures in that they deviated from the other measures more frequently. On the other hand, the physiological measures (amount of arousal and latency to arousal) were more likely to be related to at least one other measure.

It is clear from the within-subject patterns that while the five verbal measures showed the greatest pattern deviations, there is no evidence that any one verbal measure deviated significantly more than another. Finally, for ninety-three percent of the graphs, amount and latency to arousal were consistently concordant. The relationship between verbal and physiological measures will be discussed in further details in another section of this chapter.

The group and the individual patterns. A major component of the current study was to determine if idiothetic and nomothetic derived data lead to different conclusions regarding the relationship among the seven dependent measures. The present section compared these approaches with respect to pattern similarities/differences among the seven dependent measures.

With respect to patterns, the idiothetic and the nomothetic approaches differed along several dimensions. In the four graphs (see Figures 1-4 in Appendix E-3) depicting the group performance, there was only weak evidence to support that these measures are related to each other. For these four groups, no more than three to four measures were identical in their patterns. Furthermore, when data were expanded across the public-private conditions for both the male and female slides (see Figures 5 and 6 in Appendix E-3), as well as across all factors (see Figure 7 in Appendix E-3), the number of related patterns did not differ from the number prior to expansion. In addition, the number of related patterns showed no specificity for either stimulus or condition. That is, there were no more or fewer related patterns for private female than there were for public males. Also, there is no evidence, except that dependent measures latency to arousal and predicted time to arousal were consistent with each other for three groups (Public/Female, Public/Male, and Private/Male), that the patterns observed to be consistent within one group, showed this same consistency within a second group. On the other hand, as shown in Table 6 (Categories 1, 2, and 5), sixty-eight percent of the within-subject graphs were consistent across five or more dependent measures. Furthermore, of this group, forty-one percent showed consistency across all seven dependent measures. Within-subject pattern consistency was judged to be stimulus related, with more consistency shown among the measures for female as compared to male slides.

An examination of the four group level graphs (Figures 1-4) suggest some pattern consistency across the group for at least two of the seven depenent measures. Latency to arousal and predicted time to arousal were consistent for three of the four major groups. That is, at the group level of analysis, subjects were able to predict with some consistency, the amount of time to arousal. The within-subject patterns, however, indicate that amount of arousal and predicted amount of arousal were no more consistent in pattern across groups and stimuli than the other measures. The within-subject patterns did show consistency across both stimuli and conditions for two measures. Specifically, latency to arousal and amount of arousal were judged to have identical patterns for approximately ninety-three percent (thirty seven of forty graphs) of the within-subject graphs.

There is evidence from the group patterns that the one best measure for predicting the patterns of the other measures is predicted time of viewing. At the individual level of analysis, however, this measure, along with the other predicted measures, were judged to be the poorest measures in predicting the patterns of the other measures. That is, of the deviate patterns observed with female slides, eighty-three percent were of a predicted measure. A similar case was observed with male slides.

In summary, at the group level of analysis there is only weak evidence to support that the patterns displayed by the seven dependent measures are related. Conversely, patterns examined idiothetically seem to indicate a strong relationship among these measures.

Public and Private Conditions: Effects on Measurement Interrelationships

The public-private manipulation was included in the present study for two reasons. First, it was employed as an attempt to alter level of responding both within and between subjects. The results of the univariates indicated that these variables were differentially effective in altering subjects' level of performance on two measures (amount of arousal and latency to arousal), particularly with regard to male slides. Secondly, since this manipulation has proven to be quite powerful in a variety of situations, it was hypothesized that these variables would also have an effect on the degree in which these measures covaried. This would appear especially for male slides since it is clear that these variables influenced level of responding on some measures with this stimulus. Since the same subjects and data were involved in both idiothetic and nomothetic analyses, it seems reasonable to assume that such differences would be apparent across modes of analyses. Therefore, a third means of comparing the two approaches was on the difference between the public and the private condition in terms of the magnitude of correlation among the seven dependent measures.

In order to assess any differences between the public and the private conditions at the group level of analysis, a t test for independent samples was made on each relationship across the four assessment sessions. Specifically, the correlation coefficients observed between two measures at each of the four assessment sessions for public subjects were compared to the correlation coefficients between these same two measures at each session for private subjects. An example should clarify this further. At the group level of analysis, the relationship between amount of arousal and latency to arousal for public subjects (female slides) was observed to be .45, .50, .73, and .70 for assessment sessions one through four, respectively. These correlation coefficients are shown in Appendix D-9. Using a t test, these coefficients were compared to those observed between amount and latency for private subjects (female slides), which were .48, -.68, .37, and .66 for assessment sessions one through four, respectively. These relationships are shown in Appendix D-10.

The comparison just mentioned was made within each stimulus class for the group data. Since correlation coefficients are not distributed normally, a Fisher's r to z transformation was made on each correlation coefficient prior to the *t* test. The *t* scores for this comparison are shown in Appendix D-11. None of these comparisons were observed to be significant. The degree of relationship among these measures for female slides did not differ for the public and the private subjects. A similar finding was observed with male slides. This finding, however, might be viewed with some caution given the small sample size.

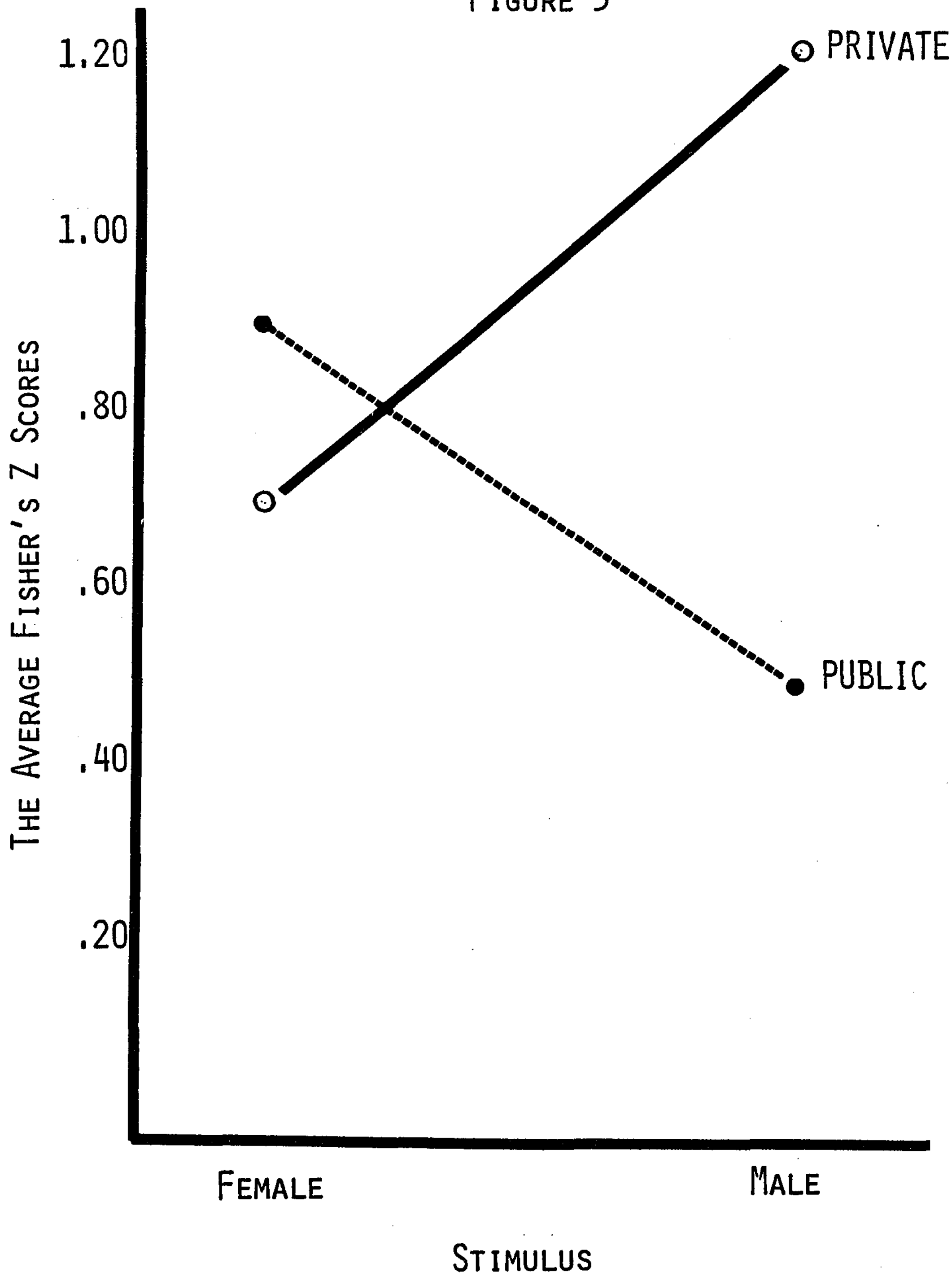
In order to examine the effects of the public-private manipulation at the idiothetic level, a *t* test for independent samples was employed on the within-subject correlation coefficients. Again, a Fisher's r to z transformation was made on each correlation coefficient prior to employing the *t* test. The data used in this comparison are shown in Table 3 (see page 74).

At the idiothetic level of analysis, the degree of relationship among the seven dependent measures for female slides did not differ for the public and the private subjects, $t\ (18) = 1.54$, $p < .05$. However, the difference between the public and the private conditions for male slides was significant, t (18) = 2.07, $p < .05$. As shown in Figure 5 for male slides, the degree of correlation among these seven variables was significantly higher for private than public subjects. This was expected.

Any conclusions regarding the public-private distinction seem to depend on the type of analysis involved. Nomothetically, there is no difference between public and private subjects in terms of the degree of correlation for the seven dependent measures for either female or male slides. However, at the idiothetic level of analysis, the hypothesis that the degree to which measures relate differ for the two groups for male slides, was supported.

In order to evaluate further the influence of the public-private dimension on correlation coefficients, it was necessary to deviate from comparing the two models, and to concentrate directly on the within-subject correlations where a significant difference was observed between public and private subjects for male slides. Four subjects from both the private and the public conditions were selected randomly to participate in four additional assessment sessions. The four private subjects selected participated in these four additional sessions as public subjects. For clarification, these subjects are referred to as private/public subjects. The four public subjects participated in the additional assessment sessions as public subjects and are referred to as

FIGURE 5



THE DIFFERENCE BETWEEN THE PUBLIC AND PRIVATE CONDITIONS FOR BOTH FEMALE AND MALE SLIDES DURING THE FIRST FOUR SESSIONS public/public subjects.

The average within-subject correlations for these subjects for the first four assessment sessions and for the four additional sessions are shown in Appendixes D-12 and D-13, respectively. The figures illustrating the performance of these subjects during the first four sessions, and the additional sessions are shown in Appendixes E-9 and E-10, respectively. As shown, during the first four sessions, the difference between public and private subjects for male slides is much greater than that for female slides. A $\underline{t}$ test revealed that during these sessions, private subjects showed significantly higher correlations for male slides than did the public subjects, $\underline{t}$ (6) = 2.45, $\underline{p} < .01$. On the other hand, there was no difference between these two groups for female slides, $\underline{t}$ (6) = .67, $\underline{p} < .10$.

During the four additional sessions, there was no difference between the private/public subjects and the public/public subjects for either the female or the male slides. This was confirmed in a $\underline{t}$ test for female slides, $\underline{t}$ (6) = .67, $\underline{p} < .10$, and for male slides, $\underline{t}$ (6) = .31, $\underline{p} < .10$.

The difference between the public and private conditions for male slides was significant at the first four assessment sessions when there was a clear private-public distinction, but not during the last four sessions when all subjects were in a public condition. This suggest that the two conditions were differentially effective on how the seven dependent measures related, at least for male slides.

Summary. The group level of analysis was compared with the individual level of analysis along three dimensions--statistically, descriptively, and by examining the influence of the public-private manipulation on intercorrelations. While not statistically significant, higher correlation coefficents were observed at the individual level of analysis as compared to the group level. Furthermore, the greater number of pattern similarities among the seven dependent measures was observed at the individual level than at the group level of analysis. Nomothetically, there was no difference between the correlation coefficients observed for public and those for private subjects for either female or male slides. On the other hand, at the individual level of analysis, while there was no difference between the correlations among these measures for public as compared to private subjects for female slides, the difference between these conditions was significant for male slides, with the higher correlations observed for the private condition. In addition, at the individual level of analysis, when these private subjects were re-evaluated in a public condition, their performance with male slides matched that of the public subjects.

Subsidiary Issues

In the three areas examined thus far, idiothetic derived data were superior to that derived nomothetically. Another area which highlights the advantages of idiothetic over nomothetic data is in an evaluation of variability at the group level of analysis.

In the current study variability among measures and relationships was evaluated in several ways. One method involved examining each assessment session within a multicontent, multimethod, multibehavior framework. The within-session data examined in this fashion were compared with the within-session data for another session examined in this same manner. For an explanation of this model, the reader is encouraged to return to Chapter I of this manuscript (pages 14 through 16). The reader is also advised to return to Appendix E-1 to recall the layout of this model as applicable to the present study.

The use of the multicontent, multimethod, multibehavior model at the group level of analysis assumes a certain degree of stability in the relationship between measures. One would expect, if not a high correlation, at least consistent correlation coefficients across time. For example, the contribution of method variance should be similar across time. Shown for the group in Appendix D (9, 10, 14, and 15) are the correlations for each of the twenty-one relationships at each assessment sessions. As shown, the extent to which two measures covary seems to depend on the particular time in which this relationship is examined. This seems to be the case when correlations are observed within a content area, as well as between content areas. For example, shown in Appendix D-9 is the relationship between predicted amount of arousal and predicted time to arousal (self-report of amount of arousal and latency to arousal, respectively) for female slides, public subjects. The degree of relationship between these two measures at assessment session one through four was .53, .73, .79, and .55, respectively; a difference of twenty-six points between the highest and the lowest correlation coefficient. These correlations, however, do suggest a moderate to strong relationship between these two measures. Similarly, the relationship between amount of arousal and latency to arousal (direct observation of amount of arousal and latency to arousal) was observed to be .45, .50, .73, and .70 for assessment sessions 1-4, respectively; a difference of twenty-three points between the highest and the lowest correlation coefficient. With the exception of assessment session one, all correlation coefficients were at or above .50, suggesting a moderate to strong relationship between amount of arousal and latency to arousal. In the framework of the multicontent, multimethod, multibehavior model, a low correlation observed between two measures assessing, say time of arousal (self-report of predicted time to arousal vs. direct observation using a latency measure) would be accounted for by "real" differences, as opposed to method differences. This is difficult to assess, however, given that the relationship observed between latency and predicted time of arousal was .43, .80, .44, and .21 for assessment sessions one through four, respectively. This variability is present across matrices and suggest relatively little stability in the degree of relationship between any given two dependent measures.

This finding is noteworthy for two reasons. First, the degree of variability observed seems to undermine somewhat the value of Cone's model. It is difficult to assess if two measures are weakly related because of method or real differences as Cone would suggest, or is a function of the time at which the measures were sampled. Specifically, the degree to which two measures related differed from session to session.

The variability observed at the group level of analysis is important because it clearly documents the difficulty with replicating findings at this level. The present study aids in providing an explanation for this problem. Specifically, the present study is in fact a replication of the same study four different times employing identical subjects and experimental conditions. Even when these major factors remain constant, findings vary from time to time.

Prior to continuing with the issue of variability, it is important to look more closely at Cone's (1979) model. When data were aggregated across sessions, conditions, and stimuli, the findings were often similar to what Cone would expect. This is illustrated in Table 7. The data in this table were gathered from Appendixes D-9, D-10, D-14, and D-15. For example, the .60 located in the first column (Public/Female) of Table 7 represents the average correlation between amount

Table 7

Mean Correlations Across The Four Assessment Sessions

Relationships	Public Female	Private Female	Public Male	Private Male	Mean
Amt/Lat[1]	.60	.55	.69	.87	.678
Sua	.21	.19	.40	.71	.378
Paa	.29	.22	.34	.60	.368
Pta	.33	.32	.29	.68	.405
Ptv	.52	.34	.25	.54	.413
Alt	.51	.41	.32	.43	.418*
Lat/Amt	.60	.55	.69	.87	.678*
Sua	.46	.10	.48	.67	.428
Paa	.40	.22	.60	.58	.450
Pta	.47	.27	.25	.64	.418
Ptv	.49	.18	.26	.52	.368
Alt	.23	.25	.26	.43	.293
Sua/Amt	.21	.19	.40	.71	.378
Lat	.46	.10	.48	.67	.428
Paa	.64	.72	.46	.88	.675*
Pta	.75	.40	.49	.80	.610
Ptv	.58	.69	.40	.47	.535
Alt	.64	.64	.34	.42	.510
Paa/Amt	.29	.22	.34	.60	.363
Lat	.40	.22	.60	.58	.450
Sua	.64	.72	.46	.88	.675*
Pta	.61	.32	.37	.92	.565
Alt	.71	.83	.06	.33	.483
Ptv	.64	.72	.45	.55	.598
Pta/Amt	.33	.32	.29	.68	.405
Lat	.47	.27	.25	.64	.408
Sua	.75	.40	.49	.80	.610
Paa	.65	.32	.37	.92	.565*
Ptv	.58	.39	.29	.57	.458
Alt	.49	.64	.26	.31	.425
Ptv/Amt	.52	.34	.25	.54	.413
Lat	.49	.18	.26	.52	.363
Sua	.58	.69	.40	.47	.535
Paa	.64	.72	.45	.55	.590*
Pta	.58	.39	.29	.57	.458
Alt	.45	.55	.36	.26	.405

Table 7

(Continued)

Relationships	Public Female	Private Female	Public Male	Private Male	Mean
Alt/Amt	.51	.41	.32	.43	.418
Lat	.23	.25	.26	.43	.293
Sub	.64	.64	.34	.42	.510*
Paa	.71	.83	.06	.33	.483
Pta	.49	.64	.26	.33	.425
Ptv	.45	.55	.36	.26	.405

[1]Amt - Amount of arousal
Lat - Latency to arousal
Sua - Subjective units of arousal
Paa - Predicted amount of arousal
Pta - Predicted time to arousal
Ptv - Predicted time to viewing
Alt - Attraction level

of arousal and latency to arousal across the four assessment sessions shown in Appendix D-9; the .55 in the second column (Private/Females) represents the average correlation between amount of arousal and latency to arousal for data taken from Appendix D-10. Once the mean score had been determined for each major category, an overall mean score (labeled "Mean"), based on each major category, was computed. As shown by the mean scores in Table 7, the physiological measures (amount and latency to arousal) correlated better with each other than either did with the other measures. Predicted time to arousal correlated best with predicted amount of arousal; two different behavior (time and amount) sampled by self-report. Similarly, subjective units of arousal (how aroused are you?) correlated best with predicted amount of arousal. It seems that verbal measures tended to correlate best with other verbal measures, and the physiological measure tended to correlate best with the other physiological measure. As shown in Table 7, the correlation between the different methods (e.g., direct observation and self-report) used to sample a similar behavior (e.g., amount of arousal) proved to be no better than if the two methods had sampled different behaviors.

Further evidence of variability in the data is revealed by the percentage of the correlation coefficients in each group and assessment session which fall into the low (correlations which are below .49), medium (correlations between .50-.69) and high (correlations that fall above .70) ranges.

As shown in Appendix D-16, the percentage of correlation coefficients which fall within each range varys from session to session, especially for the high and medium groups.

Also indicative of the variability is the degree to which the significant relationships altered from session to session. As indicated by the asterisk in Appendixes D-9, D-10, D-14, and D-15, a relationship observed to be significant at one assessment session, may or may not be significant at another session. For example, the relationship between attraction level and subjective units of arousal for private subjects, female slides, was significant only at session four (.88). The relationship between these two measures was observed to be significant at sessions two and four, but not at sessions one and three for public subjects, female slides.

Another indicator of the variability among the correlation coefficients at the group level of analysis is shown in Appendix D-17. This appendix shows the range (the difference between the highest and the lowest correlation coefficient across the four assessment sessions for each relationship). The data in Appendix D-17 are based on information gathered from Appendixes D-9, D-10, D-14, and D-15. To clarify, in the first column (Public) of Appendix D-17 there is a twenty-eight point difference between the highest and lowest correlation for amount of arousal and latency to arousal (.73 minus .45 = 28 points). This is shown in Appendix D-9 in the first row for amount of arousal and latency to arousal. While there are few significant differences, an examination of Appendix D-17 clearly reveals much scatter among relationships. One might argue that this variability is due to the relative small number of subjects employed in each condition. However, even when the number of subjects were expanded, as in the combined conditions, the degree of variability did not change substantially. This is highlighted in Appendixes D-18 through D-23, especially in Appendix D-22 where data were expanded across both stimuli and conditions, and Appendix D-23 where data were expanded across all factors including sessions. The range was quite varied for each measure. For example, the relationship between amount of arousal and latency to arousal varied from .18 to .81, or predicted time to arousal and subjective units of arousal from .00 to .67. Also, Appendix D-23 shows the results of aggregating data across sessions. While the correlation coefficients are not very high (only twenty-nine percent of the correlations were at or above .50), they are more consistent with each other than when assessed at each assessment session (range: .30-.73). This aggregation of data is essentially what Epstein (1979; 1983) has proposed as a means of better predicting behavior. This will be discussed further in Chapter IV of this manuscript.

In summary, the magnitude of correlation observed between two measures at the group level of analysis may be strong at one assessment session, while only weakly related at another session. The degree of relationship between two measures can not be predicted from one assessment session to the next. Furthermore, there is no evidence that the observed variability is specific to either stimuli or conditions.

Summary

The results were divided into five components. First the variability in the data was identified. Specifically, level of responding on the physiological measures was significantly higher for private as compared to public subjects. This difference, however, was restricted to male stimulus. Another source of variability was habituation which was observed with female stimulus only. In the second section, the effect of the variability was examined quantitatively. While not statistically significant, the higher correlation coefficients were observed idiothetically as compared to nomothetically.

The third division discussed the effect of variability on pattern similarities/differences. A nonparametric approach was employed to evaluate patterns. Nomothetically, the patterns displayed by the seven dependent measures appeared weakly related. This was consistent across stimuli and conditions, whether collapsed across independent variables or viewed separately. However, idiothetically, the patterns displayed among the seven dependent measures appeared strongly related. This was more pronounced for the female slides than for the male slides.

The fourth section examined the effect of the public-private dimension on the magnitude of correlation. At the group level of analysis it was concluded that there was no difference between the correlation coefficients yielded by public subjects as compared to those produced by private subjects. This was consistent for both female and male stimuli. However, at the individual level of analysis a significant difference was observed between public and private subjects to male slides.

The final section of the results examined variability in correlation coefficients both within and between assessment sessions using several different nonparametric approaches. It seems clear that degree of relationship between two measures can not be predicted from one assessment session to another. This is noteworthy in light of the fact that each assessment session involved the same subjects and experimental conditions.

CHAPTER IV

DISCUSSION

Introduction

The idiothetic-nomothetic debate has its roots in the personality literature. The issues currently prominent within this debate parallel quite closely those within behavioral assessment relevant to understanding the relationship among response systems. Briefly, in personality theory, "personality" is characterized by stable, enduring factors referred to as traits. However, there is evidence (e.g., Mischel, 1968; Mischel & Peake, 1982) which suggests that such stability over time and situations generally does not exist. Trait measures frequently fail to correlate with overt behavior, or even with other trait measures supposedly measuring the same trait, usually generating correlation coefficients between .20 and .30 (cf. Epstein, 1983). Methodological problems are often cited as the reason for the lack of stability and the weak relationships often observed among these measures (e.g., Bem & Allen, 1974; Epstein, 1979, 1983; Lamiell, 1980). Similarly, in behavioral assessment, stability or consistency in the relationship among measures is often implied. When this relationship is abated, methodological artifacts are also cited as the explanation (e.g., Cone, 1979).

Another similarity between the two areas is that both have sought to understand behavior by identifying the predictive relationship between one measure and another. For example, trait theorists have attempted to predict overt behavior in a variety of situations from measures of psychological traits, such as friendliness, conscientiousness, and neatness. Similarly, in an effort to understand the generalization among response systems, behavioral assessors have specified the need to predict performance on one measure from performance on another measure (e.g., Barlow, et al, 1980).

In the personality literature some have argued that examining the issue of stability at the group level of analysis has contributed significantly to the problem of understanding traits (e.g., Allport, 1962; Lamiell, 1983). It has been proposed instead that traits measures be investigated idiothetically. The basic premise is that consistency among measures varies from individual to individual (Bem & Allen, 1974; Lamiell, 1981), and therefore, it is only at the level of the individual can the issue of stability be resolved. Similarly, in the behavioral literature there is growing evidence (e.g., Barlow, et al, 1980; Leitenberg, et al, 1971) which suggests that patterns of synchrony and desynchrony among measures also vary from subject to subject. It is not clear, however, how these different patterns might surface at the level of the group.

The present study was designed to evaluate further the idiothetic-nomothetic distinction. It seems important that the dimensions along which these analyses differ be specified empirically. The triple response model was the framework in which this investigation proceeded. It was thought that a comparison of idiothetic-nomothetic data within this framework would allow for a better understanding of both synchrony (agreement among measures), and desynchrony (disagreement among measures). It was hypothesized that a major source of the difference between the two analyses would be level difference among the measures. Specifically, it was argued that what is often viewed as a pattern change, or a change in the magnitude of correlation at the group level of analysis, may merely be a level change at the individual level of analysis. Differential level of responding across measures and individuals is well documented (e.g., Barlow, et al, 1980; Geer, et al, 1974; Lang & Lazovik, 1963). While level of responding may often change, the degree of correlation within individual may remain unaffected. Thus, it was expected that there would be more synchrony at the individual than at the group level of analysis.

The complexity of the results dictates that the basic outline of this chapter be reviewed prior to discussing the data. Two of the nine dependent measures (relative rate of responding and relative time spent responding) were discarded from the analyses. The rationale and the implications of omitting these measures will be discussed first. An important component of the present study was to understand the influence of variability on idiothetic and nomothetic data. Therefore, the second section will discuss the differences between idiothetic and nomothetic data, and the influence of variability on these differences. The final two sections offer suggestions for future research and a summary.

The Motoric Component

The matching procedure, as employed in the current study, may not be a fruitful method of investigating sexual preference. The present results clearly question the concurrent validity of this procedure. For example, subjects invariably showed greater arousal (physiological measures) and attraction (verbal report) to female slides. However, their rate of responding, and the time they spent responding (motoric responses) to female slides was not always superior to their rate and time for male slides. The experimental design for this study may have contributed significantly to this lack of validity. First, the slides shown during the motoric phase were identical to those shown during the verbal phase. Critical here is the fact that during the verbal phase, subjects controlled the length of the exposure duration of each photograph. As such, they may have become less interested in working for a five second exposure duration of a slide, when, during another phase, they could see the slide for as long as desirable without working. Second, the instructions clearly specified that the motor phase would terminate once nine slides had been exposed. Thus, subjects knew that they could terminate this phase by working quickly. The subjects may have pressed the levers, not to get access to a particular slide, but to any slide.

This hypothesis seems particularly tenable in light of the findings from a pilot study employing homosexual males and procedures identical to those used in the current study to examine the motoric component. Initially, these subjects showed greater responding and spent more time with male slides than female slides. However, when the motoric procedure followed a verbal phase in which subjects had access to the slides for as long as they selected, the difference between male and female slides was nonsignificant. This suggests that the matching procedure as used in this study, may be useful in the initial selection of a stimulus when there is some ambiquity regarding a subject's sexual preference. For example, one might employ this procedure to determine a pedophiliac's preference for male or female children, or to determine the type of scenes that are likely to produce arousal for a rapist. Subsequently, the clinician might use this information to develop scenes, or to select slides for research or treatment.

Previous research with the matching paradigm using humans typically has involved subjects' participation in numerous experimental sessions, even more than those employed in the current study. Unlike the current study, however, subjects in previous matching studies (e.g., Baum, 1975; Schmitt, 1974) have not become noticeably disinterested nor have they discontinued responding during the experiment. One conspicuous difference among these studies is that research has generally featured powerful conditioned reinforcers such as money, or points exchangeable for money. For example, Baum (1975) had subjects complete a vigilance task of detecting and destroying two types of enemy missles in a series of 40, forty-five minute experimental sessions. Subjects were paid $1.50 per session (a total of $60.00). Conditioned reinforcers of this sort are not likely to lose their reinforcing value and thus the matching procedure might be easier to conduct with humans in this situation.

Variability: The Effect Of The Public-Private Manipulation

A public and a private condition, and male and female stimuli were included in the present study to ensure variability (level and pattern differences) in the data. The fact that private subjects showed a higher level of responding to male slides on amount of arousal and latency to arousal than did the public subjects was no surprise. It was expected that the greatest difference between these two groups would be on the physiological measures (amount and latency to arousal). These measures are more frequently associated with sexual arousal and are most likely to be influenced by public examination, especially when the stimuli are socially unacceptable. It was also expected that the public and private conditions would differentially influence overall correspondence among the seven dependent measures, especially to male slides. This did occur, and was specific to male slides. However, it was apparent only in data derived at the individual level of analysis.

Another source of variability identified in the data was time. For example, subjects showed a decrement in their amount of physiological arousal from assessment session one to four for female slides. While usually not specific to a particular stimulus class, this decrement was no surprise since habituation is quite common in repeated measure designs, especially when physiological measures are involved (Hodgson & Rachman, 1974; Montague & Coles, 1966). The specificity of habituation to female slides seems clear. Subjects showed considerable arousal to the female slides during the first session. As the number of assessment sessions increased, subjects' arousal to female slides deteriorated. For male slides the level of arousal was generally already low, and, due to a floor effect, subjects did not show significant deterioration of arousal.

The predicted time of viewing measure was also influenced by time, while all other verbal measures remained relatively stable. It is possible that the predicted time of viewing measure was influenced by arousal state. Specifically, when arousal state decreases, the desire to view the stimulus may also decrease. Responses on the other verbal measures, however, may have been shaped by past history or predictions regarding the future, rather than by the current arousal status. That is, "how aroused one will become," or "how attractive a stimulus is" may be a function of how a subject perceives that others will respond to that stimulus, or how a subject felt in the past during an optimal physiological state, or how he will respond when his current physiological state is altered. As such, these measures may be unaffected by time. This explanation seems quite plausible in light of the fact that subsequent to each experimental session, many subjects commented on the repetitiousness of the slides, yet continued to make specific positive statements regarding the attractiveness of particular females in the slides.

In summary, the public-private manipulation did have an influence on two of the seven dependent measures (amount and latency to arousal) for male slides. This effect was expected since males often do show arousal to these stimuli, but yet they are considered socially unacceptable arousal stimuli for males. Habituation was another source of variability. This was expected given the repeated measure design of this study.

Differences Between Idiothetic And Nomothetic Data

The patterns and the correlation coefficients yielded by the group level of analysis suggest that the seven dependent measures are only moderately to weakly related. Specifically, only thirty-one percent of the average correlations for the four major groups (public--female and male, private--female and male) were at or above .50, and no more than three patterns were related across time for each of these four groups. While these findings were expected, it was also hypothesized that between subject level difference could be the factor responsible for attenuating the correlations yielded by the group data. This factor, however, could not be unambiguously specified as the source of the weak correlations observed with the groups in this study. As noted, level differences between public and private conditions were substantiated empirically for male slides. If collapsing data across different levels of responding decreases the magnitude of correlation at the group level, then when data were collapsed across the public and private conditions for male slides, the average correlation coefficient for each assessment session should have been attenuated. This hypothesis was not supported in the present study. When data were collapsed across the public and private dimensions, changes in correlation coefficients were noted not only for the male slides, but for the female slides as well. Furthermore, these changes were not always a drop in magnitude of correlation.

The fact that changes occurred for both the male and female slides when data were collapsed across the public and private conditions, suggest that factors other than just level difference were involved. The level difference between the public and private conditions, however, could have been outweighted by level differences between individuals within the group. This is possible since when individual level differences could not be a factor, as in the computation of the within-subject correlation coefficients, the magnitude of the correlations increased substantially (ninety percent were at or above .50). The pattern displayed among measures frequently remained consistent across time within individuals.

One might argue that the factor responsible for the differences between the group analysis and the individual analysis is that at the group level of analysis correlation coefficients were based on a single assessment session, while within-subject correlations were based on data produced across four sessions. This argument, however, is not viable given that when correlations were computed across the four assessment sessions at the group level of analysis, the mean correlation coefficients continued to be below .50. While not statistically evaluated, correlations continued to be higher at the level of the individual than at the group level of analysis.

The higher correlations and consistency among patterns observed at the individual level of analysis may also be questioned. Critics, for example, might argue that within-subject correlations and patterns are artifically high because the data were produced by a single individual; and, therefore, are inherently related. This was, however, the primary purpose of this investigation, to determine within-subject how the seven dependent measures relate.

The within-subject correlations may also be questioned given that they violate the assumption of normal distribution. With small samples of data, the normality of the distribution is difficult to determine. While the normal distribution is often believed to be a necessary assumption in computing correlation coefficients, the consequences of violating this assumption have not been clearly specified. According to Hays (1981, p. 466), for example, in computing correlations it is not necessary to make any assumptions at all about the form of the distribution. "One may apply correlation technigues to any set of paired score data and the results are valid descriptions of two things." Furthermore, as stated by Binder (1959, p. 167) "correlation coefficients, as computed in the usual manner, have many interpretative properties without any assumptions."

In discussing the patterns and the correlation coefficients yielded by both analyses, it is important to call attention to the degree of variability in these correlations. This seems particularly important at the group level of analysis since this is the approach most often employed in studying response-response relationships, and the basis for many of our assumptions regarding such relationships.

At the group level of analysis, two sources of variability of response interrelationships were observed. First, there was considerable variability among the twenty-one correlation coefficients obtained at a given assessment session; what might be called within-session variability. Second, there was between session variability, that is, variability among the correlation coefficients between given measures across the four assessment sessions. The degree of variability observed in the current study documented that the magnitude of the correlation between two measures at the group level of analysis can be quite tentative. Because Cone's (1979) multimethod, multicontent, multibehavior model, as employed in the current study, clearly illustrated this point, it seems important to discuss it as this time.

The rationale for employing seven dependent measures in the current study was that it provided an opportunity to evaluate further Cone's model. This model has been proposed to help evaluate intersystem relationships. It was originally predicated on nomothetic principles, and thus the degree of variability observed at the group level of analysis in the current study has particular implications for this model.

One assumption underlying Cone's model is temporal stability in response relationships. If the degree of relationship between two measures is not stable over time, a nomothetic analysis will yield inconsistent results. In traditional psychometric approaches, when such stability does not exist, the problem is typically hypothesized to be within the measure or in the analysis (Epstein, 1979), rather than in that which is being measured. The relationship observed among the measures in the current study were not stable over time. It is interesting that this lack of stability was apparent even among those measures (e.g., amount and latency to arousal, and subjective units of arousal) which have been demonstrated to be good measures of sexual arousal in males (e.g., Barlow, 1977). Similarly, stability was not always found even within monomethod, monocontent correlations. Therefore, in the framework of Cone's model, which was designed to tease out the contribution of method variance to relationships, what might appear to be a problem in methodology at one assessment session might disappear at another assessment session. This temporal factor complicates considerably the use of Cone's model in evaluating the quality of dependent measures or intersystem relationships.

One problem with Cone's model is that it is difficult to determine if an observed weak relationship between two measures, supposedly measuring the same behavior, is the product of the method used to sample the behavior, or due to the possibility that the specific behaviors in question changed differently as a function of time. The influence of time and situation on behavior is well documented (e.g., Mischel, 1968).

It is quite possible that the measures employed in the current study were influenced by a number of extraneous variables. Habituation, which was cited earlier as having a significant influence on at least two of the dependent measures--subjective units of arousal and predicted time of viewing--is an example. While it remains unclear how this variable, as well as other variables might have influenced variability among correlations, they can not be ruled out as contributing factors. The important point is that in order for Cone's model to be effective in discerning method variance, it will be necessary to account in some way for the changes that occur in behavior merely as a function of time.

Despite the variability observed over time, there is evidence which suggest that the model has some merit at the group level. When data were collapsed across the four assessment sessions, for example, the findings were generally consistent with what would be expected by Cone's model. Specifically, the magnitude of correlation tended to be better between two different behaviors (e.g., amount of arousal and time to arousal) sampled by the same method (e.g., direct observation of physiological arousal), as compared to when a single behavior (e.g., amount of arousal) was measured by different methods (e.g., subjective units of arousal and direct observation of physiological arousal). Stated differently, verbal report tended to correlate best with other verbal report, while physiological measures tended to correlate best with each other.

The relationships were not always strong (i.e., above .50). However, the fact that a correlation coefficient was generally higher when two measures were arranged to reflect a sample of the same behavior than when they were not, certainly provides some merit to Cone's model, and suggests the need for further evaluation of the model. This seems particularly important given that the measures which correlated best were frequently sampled in different experimental phases, while others which were sampled in the same phase, showed less of a relationship. For example, attraction level and subjective units of arousal, both verbal measures sampled in the physiological phase, were least correlated of the verbal measures, while subjective units of arousal and predicted amount of arousal, both verbal report designed to sample amount of arousal, but sampled it in different experimental phases (physiological and verbal, respectively), were better correlated. Better correlations across experimental phases than within experimental phases for two measures seem to suggest that the two measures share some common element.

Related to variability is the issue of predictability; the degree that one measure may be used to predict the performance of another measure both within, as well as across assessment sessions. The issue of predictability has been important in both trait and behavioral assessment. In the personality literature, for example, the issue has been to predict overt forms of behavior in a variety of situations from a single trait measure. One reason that behavior assessors have been quick to coin a triple response model is because measures and/or systems do not always covary; and, therefore, one cannot always predict reliably performance on one measure from that of another measure. And recently there has been an urgency among behavioral assessors (e.g., Barlow, 1981; Barlow, et al, 1980; Nelson & Hayes, 1979) to understand the process of positive and negative generalization among measures and systems, which in essence, is also a desire to predict behavior. Clinicians are concerned whether or not treatment targeted toward one system will effect other measures or systems.

In order to increase the predictive ability of one measure for another measure, Epstein (1979, 1983) proposed aggregating data over occasions. The general assumption is that any information obtained on a single occasion will represent a person's behavior only at that specific point in time rather than across time. That is, behavior sampled on one occasion has a high component of error of measurement and a narrow range of generality. As such, its ability to predict decreases. Therefore, to improve predictability, one must improve generality, which may be improved by decreasing error of measurement associated with limited assessment sessions. Epstein (1979; 1983) provided evidence to support this contention. He found that correlation coefficients based on aggregated data increased significantly over unaggregated data, thus increasing the degree to which one measure could be used to predict another. Such data have been used to support the notion that broad range disposition and/or traits do exist.

The findings of the current study are quite contradictory to Epstein's findings. When data were aggregated over occasions, correlation coefficients did not increase substantially over those yielded prior to aggregation. In some cases, aggregation over occasions lead to a decrease in the correlations. The differences between the current findings and those of Epstein can not be accounted for easily. There are, however, procedural differences which might account for the divergence. Epstein (1979) aggregated data over as many as twenty-eight occasions, while only four occasions were sampled in the current study. Also, as discussed by Mischel and Peake (1983), frequently the measures employed by Epstein were logically compatible and would have correlated under most circumstances. For example, "the number of letter I receive" was correlated with "the number of letters I write." In the current study, the dependent measures were more independent, for example, friendly appearance vs. degree of sexual arousal.

More recently, Epstein (1983) has proposed that aggregation over occasions will yield substantially higher correlation coefficients than within-subject correlations. He also argued that there are no reasons to believe that within-subject correlations will be greater than between-subject correlations, and that "aggregation...appears to be as effective in increasing intra-subject as inter-subject correlations" (p. 379). This contention, however, was not supported by the current data. The degree of predictability was greater for the within-subject data as compared to the between-subject data. Furthermore, when idiothetically derived data were aggregated, the magnitude of correlations did not increase over and beyond unaggregated individual data.

Epstein's concerns, while specific to understanding traits and broad range dispositions, are similar to those of the current study; how can specific measures and their interrelationships best aid in understanding the behaviors of the individual. This information is difficult to tease out of Epstein's aggregated data. Specifically, while aggregation has been known to increase the magnitude of correlation between two measures (Epstein, 1979, 1983; Cheek, 1982), it is still data summed across individuals; and, therefore, the problems with group data remain. Aggregation has been proposed essentially as a means of understanding and/or predicting the behavior of individuals. Therefore, a key question which arises from Epstein's findings is how much of the aggregated group data reflect the individual. The data yielded by the current study suggest little relationship between data yielded at the group, whether unaggregated or aggregated, and data yielded at the level of the individual. Specifically, overall correlation coefficients tended to be higher for individual subjects than for the group of which those individuals were a part. Furthermore, patterns were more consistent across measures for individuals than the group patterns which represented those same subjects.

In discussing consistency and predictability, it is important to examine more closely the data yielded at the level of the individual. For each subject there were almost always measures which were capable of predicting a subject's performance on another measure. However, particular dependent measures were not always consistent in which of the other measures corresponded across time and across subjects. For example, attraction level may have agreed strongly with the dependent measure subjective units of arousal for one subject, but with another measure for another subject, and still another for a third subject. Therefore, while a specific measure may aid in understanding a particular subject's performance on another measure, its predictability diminished across subjects. This finding suggests that degree of consistency and predictability may be unique to the individual. What might adequately predict John's behavior, may not predict Mary's. This is no surprise and is well argued in contemporary literature (e.g., Hersen & Barlow, 1976; Johnston & Pennypacker, 1980). However, most of the arguments have been logical, rather than empirically based.

The present study provided evidence which strongly supports the need for individualized assessment, and the need for caution when applying nomothetic derived treatments to individuals. In making this statement, the author is reminded of some research (e.g., Costello, Tiffany & Gier, 1972; Gynther, Fowler & Erdberg, 1971) with the Minnesota Multiphasic Personality Inventory. The MMPI is a clear example of a nomothetic derived instrument which frequently has grave consequences (e.g., it is often used to determine clients suitability for particular jobs) at the level of the individual. Generally, people who have significantly elevated scales 6 (paranoid) and 8 (schizophrenia) have histories of being suspicious, guarded, poor insight and judgement, and are frequently diagnosed as schizoid personality disorder. Many blacks, however, tend to score high on these scales without the corresponding behaviors. This is not apparent in the type of group data generally employed in measurement development. One can clearly understand the hazards of applying this instrument at the level of the individual.

In the current study, different patterns of synchrony and desynchrony emerged at the level of the individual. This was no surprise. In studies (e.g., Barlow, et al, 1980; Leitenberg, et al, 1971) where two or more dependent measures have been explored over time and situations, different patterns have emerged for different subjects. Barlow, et al (1980), for example, found markedly different patterns of synchrony among several moderately to severe agrophobics on two measure of anxiety. Important is that this diverse pattern of synchrony was observed despite the fact that subjects were all seen at the same time, assessed in the same manner, and received an identical treatment.

The different patterns of synchrony and desynchrony observed at the individual level of analysis, and camouflaged at the level of the group, clearly suggest the need for individual assessment. The difficulty in determining individual topography from group data has been highlighted repeatedly by behavioral researchers (e.g., Barlow, 1981; Hersen & Barlow, 1976). Barlow (1981, p. 150), for example, states that it is difficult to determine "if a technique or a procedure that produces some changes on the average in a group of clients will be effective with any individual client walking into a clinician's office." Furthermore, this difficulty arises primarily because individuals in a particular group, although appearing similar (e.g., they are all depressed) are likely to be "quite heterogenous on a number of variables either relevant to the depression, or to social and demographic factors of the individual." A similar concern is expressed by Bergin (1966) who after reviewing a large number of outcome studies where some clients improved and others worsened, concluded that it is highly unlikely for a mean score to represent the individual score.

The differences between the idiothetic and nomothetic approaches are highlighted in the general description of the typical subject as viewed from both level of analyses. Nomothetically, as evidenced in Table 2 of Chapter III, the average relationship among the seven dependent measures would be judged weak, probably falling somewhere between $\pm.30$ to $\pm.58$ (only two correlations were above .50). The average subject reported less arousal (subjective units of arousal) and showed less arousal (amount of arousal) as a function of time, with the greatest decrement observed at session four. While his level of responding varied from session to session for each measure, it did so in an inconsistent manner. Overall, the ability to predict one measure from another for this "average" subject is weak. The average subject described idiothetically have different characteristics. Since ninety percent of the within-subject correlations were at or above .50, one would estimate that for this subject, the relationship among the seven dependent measures is moderate to strong, probably falling somewhere between $\pm.41$ to $\pm.93$. While his level of responding varied from session to session for each measure, there is a pattern to the variations. Furthermore, given this subject's performance on either amount of arousal or latency to arousal, one will be able to predict his performance on the other measure, and with a little less precision, his performance on the other five measures across time.

Because of the influence of between-subject factors, an inconsistent or weak relationship described nomothetically may only be a valid description if similar results are also obtained idiothetically. It is only when measures fail to correlate at the level of the group and are also unrelated for a majority of the subjects at the level of the individual, can it be clearly specified that these measures are unrelated.

In the present study it was demonstrated that between subjects variability limited the degree of correlation observed at the level of the group. This was not clear until data were evaluated at the level of individual. It is quite clear that the degree of pattern correlations are markedly different across subjects. When these differences were collapsed, overall correlations were attenuated. It would seem then that an idiothetic approach would be a most suitable means of examining the effects of a treatment on various response systems and their interrelationship.

The public-private effect. While the public-private manipulation was included primarily as a means of increasing the likelihood of level differences among the seven dependent measures, the effects of this manipulation on interrelationship was also important, especially in light of the hypothesis that level differences would influence correlation coefficients at the level of the group. Particularly with male slides, it was expected that we might see differences between the public and private conditions. The differences could have been argued either way. In the public condition the correlations might have been expected to be higher because of social contingencies placed on consistency. Conversely, in the private condition there would he less attempt to suppress particular responses and thus the behaviors might assume a more natural and consistent level and pattern.

The results showed that consistency among the seven measures was greater in the private condition. This effect was specific to male slides, but only when viewed at the individual level of analysis.

The influence of different levels of analyses is perhaps best demonstrated by this differential effect shown for the public-private manipulation on idiothetic as opposed to nomothetic data. The findings at the group level suggest that this manipulation was either ineffective in differentially influencing correlations or that the level differences among subjects within group were of such a magnitude, that any differences between public and private subjects were attenuated. At the group level of analysis males were no more inconsistent across measures in their assessment of arousal to a socially unacceptable stimulus (males) as compared to female slides, whether public or private.

The differences between the public and private subjects for male slides were eliminated when private subjects moved into a public condition. It is noteworthy that at least one of the four subjects that moved from the private to the public condition did ask questions regarding the changes in the instructions, while another private subject refused to continue participation after given the procedures for the public condition. However, it is not clear whether this subject was responding to the public nature of the next four sessions, or to the possible fatigue of having already completed four sessions. At least four subjects did not participate further for the latter reason.

It is interesting that the lower correlation coefficients were observed for the public subjects, especially in light of the fact that this condition is identical to the procedure routinely employed in sexual arousal research. The fact that correlations were attenuated in the public condition, as compared to the private groups, strongly suggest the need for greater sensitivity on the part of the experimenter to social variables when assessing sexual arousal, particularly with socially unacceptable or deviate stimuli.

Implications

The present study supports the contention that methodological problems may influence the degree of correlation seen among measures. The problem cited in the current study, however, is quite different from those methodological problems suggested by Epstein (1979) and Cone (1979) to account for the low correlations observed among measures which seem compatible. It seems clear from the present study that degree of correlation is also dependent on the type of analysis employed to assess the relationship. Specifically, whether or not two measures are judged to be correlated may be a function of whether it was examined at the level of the group or the level of the individual. In the current study, correlation coefficients were frequently superior at the level of the individual, as compared to those derived at the group level of analysis.

While this finding may not appear particularly earth-shaking, one has only to examine some of the recent research to understand the implications of this finding. For example, while the method of aggregating data over occasions, as employed by Epstein (1979, 1983) may be useful in eliminating variability, it does not facilitate an understanding of the issues that it was designed to address, even though the findings are frequently elaborated as if they do. Aggregating data over time is proposed essentially as a means of demonstrating that cross-situational consistency and broad range dispositions or traits exist at the level of the individual. Epstein's data do not address this issue. In fact, each step involved in aggregating moves us farther away from the individual. Specifically, in step one data are collapsed across subjects at each assessment session, and in step two data are collapsed across several assessment sessions. The present study demonstrates the hazards, that is, the loss of information at the level of the individual, when step one alone is carried out. It is not clear, why analyses which are aimed at speaking to the level of the individual should proceed by first eliminating the unique contributions of the individual through aggregating and collapsing across time and subjects.

There are two clear problems generated by Epstein's experimental design. Epstein equated findings based on aggregated group data with what an individual will do, and this group's performance across time (temporal consistency) with what individual subjects will do across situations (cross-situational consistency). The present study has highlighted the problems with equating findings based on group data with specific individuals in that group. The problem encountered by equating cross situational consistency with temporal consistency is made clear by Mischel and Peake (1982). Briefly, Mischel and Peake (1982) found that even when good measures are used, based on multiple observations of behavior aggregated over occasions, or aggregated further over response modes within situation, cross-situational consistency was modest. The average cross-situational correlation coefficient never exceeded .20. In contrast, much greater temporal stability was observed (e.g., the average correlation coefficient was .65) in the same data. Mischel and Peake demonstrated that temporal stability does not necessarily imply that the variables in question are also consistent across situations. Epstein's design seems to ignore the possibility of this difference, as well as the difference between the group and the individual level of analyses.

There are many examples in the current literature (e.g., Bem & Allen, 1974; Bem & Funder, 1974; Cheek, 1982; Harris, 1980; Kenrick & Stringfield, 1980) in which the question of predictability and consistency (both temporal and cross-situational) at the level of the individual has been clouded by the very experimental design proposed to illuminate it. For example, Harris (1980) set to demonstrate that the relationship among four different measures, all of which were based on a common construct, were stable at the level of the individual. His opening paragraph seems particularly noteworthy since it clearly illustrates the methodological confusion. Specifically, "I shall present what I consider to be an approximation to a true and stable personality profile of the <u>individual subject</u> as assessed by independent measure methods in a <u>small group</u> context" (p.729; emphasis added). Harris clearly states that group data are to be used to provide a "true" personality profile of an individual. Despite the fact that the overall range (Harris, 1980, Table 1) among subjects in each of five groups was often as much as ninety-six points, Harris concluded that the particular attribute was stable at the level of the individual since a comparison of average group means between two sessions yielded little difference.

With the type of data generated by the current study, clearly documenting the differences between idiothetic and nomothetic data, can the problem of fusing these two approaches be better understood, and studies which have fused them, be critically evaluated. The behavioral assessment literature contains clear examples of the conceptual confusion that exists.

The trend in behavioral assessment has often been to evaluate a relationship nomothetically. As demonstrated by the present study, results procured in this manner may be quite different from results obtained idiothetically. As such, it will be necessary to rethink how relationships obtained from the various analyses will be described.

Historically, the word synchrony has been employed to describe a strong relationship, and desynchrony, a weak relationship across two or more dependent measures at the level of the group. However, as shown in the current study, relationships observed at the group level, may or may not apply at the level of the individual. For this reason, it is important to re-evaluate how these terms are employed. The criticism offered here is not restricted to these terms specifically, although they are frequently used to describe relationships, but may very well be applicable to covary and failure to covary, or to concordant and disconcordant. The basic issue seems to be in employing these terms to describe results obtained nomothetically, as compared to those obtained idiothetically.

While it might be more informative to restrict the use of these terms to idiothetic data, it would probably result in more confusion since clinicians and researchers have adopted the nomothetic meaning of these terms. In order to minimize this confusion, it is proposed that group level synchrony (gls), and group level desynchrony (gld) be employed to describe the relationship among response systems at the group level of analysis, while individual level synchrony (ils) and individual level desynchrony (ild) be restricted to data obtained at the individual level of analysis. For example, ils might be used to describe the relationship among systems when over time, and/or across situations, changes in one system are associated with changes in a second or a third system. These may be synchronized (gls) or desynchronized (gld) at any one point in time at the group level. Ild, on the other hand, might be used to describe the relationship among response systems that are either nonexistant, sporadic, or inconsistent across time or situations at the level of the individual.

As demonstrated in the current study, the amount of data generated by an idiothetic analysis far exceeds that produced nomothetically. This puts a greater burden on the use of an idiothetic analysis. Ultimately, whether or not this procedure is acceptable will depend on its conceptual validity, that is, how much this procedure will increase our understanding of behavior. To a certain extent, this issue has been addressed throughout this manuscript.

One means in which idiothetic data might aid in understanding behavior is that it may yield different results from a nomothetic analysis. For example, in the current study at least two measures (i.e., amount of arousal and latency to arousal), were observed to have little or no relationship at the level of group, but proved to be related at the level of the individual for ninety-five percent of the subjects. The findings obtained at the individual level of analysis seem more conceptually consistent with the design of the study than the findings at the level of the group. Amount of arousal and latency to arousal were sampled concomittantly. Latency was defined as the amount of time between presentation of a slide and a 1 mm pen deflection on the polygraph, while amount was defined as the greatest pen deflection within a two minute interval. Subjects had only two minutes in which to respond. If they showed arousal quickly, then they had more time to build on the imageries of the slide which prompted the arousal in the first place, and thus probably became even more aroused. On the other hand, when it took longer to show arousal, subjects had less time to increase arousal, thus a longer latency equalled less arousal and vice versa, shorter latency equalled more arousal. In essence, this argument is predicated on the notion that if the sampling duration was longer, then perhaps the degree of consistency between amount of arousal and latency to arousal would have abated, at least for some subjects. However, it should be made clear that exposure durations longer than two minutes have failed to produce erections of significantly greater magnitude than that observed during a two minute interval (Abel, 1976).

Thus, the design of the present study makes it sensible that amount and latency should be consistent across time. However, this was not observed at the group level of analysis. Presumably, once again, individual differences wiped out the ability to see the correlation at the level of the group. For example, imagine two subjects who both respond more quickly when more highly aroused. However, one subject shows a higher amount of arousal at a given level of latency to arousal than the other. At the individual level, both will show a high relationship between these measures, while at the group level, the relationship is already being attenuated. On a given day both subjects might show the same latency level, but very different amount of arousal. As such, since we usually want ultimately to speak at the level of the individual, it would seem that an idiothetic analysis would be important, if not the most important strategy in examining response relationships.

Another means in which an idiothetic analysis may facilitate understanding of behavior is that it allows for a closer examination of the data; and, therefore, the influence of treatment as well as extraneous variables may be delineated.

This may be one of the more important contributions of the idiothetic analysis, for it is only at this level of analysis can a functional analysis of behavior be understood. A group design implies that the behavior under investigation is governed by the same contingencies for all subjects. Therefore, the goal is to tease out this common factor. This, of course, can be a gross error. Leonard, Paul and Yvonne may all report a desire to go to the museum and they may in fact often attend. Leonard's going, however, is intrinsically motivated by the art. Paul, on the other hand, goes to pick up women, while Yvonne goes to enjoy the free coffee and snacks often distributed at showings. While the behavior is the same, and the relationship between verbal report (I like to go to the museum) and motor behavior (approaching the museum) is strong, the contingencies which prompted and maintained the behavior and relationship differ for each subject. As this example shows, often it is only at the individual level level of analysis that it can be determined how behavior is developed, organized, and the rules which govern it be understood. Perhaps one reason why it has been so difficult to understand sexual arousal is that typical studies have employed group designs, ignoring the fact that many years, and often divergent paths unique to the individual goes into shaping the specific behavior of sexual arousal.

Still another example might further clarify the relevance of the idiothetic framework to behavioral assessment and treatment. One recent trend (e.g., Haynes, 1978; Nelson, Hayes, & Jarrett, in press; McKnight, Nelson, Hayes, & Jarrett, 1984) has been to evaluate the contribution of behavioral assessment to treatment effectiveness. The goal of behavioral assessment is to establish a functional analysis of behavior at the level of the individual, that is, to identify and specify the target behavior and its antecedent and consequent events. As such, assessment would seem to lead directly to the selection of a treatment. And frequently it does. However, nomothetic derived treatments are often employed. For example, if a patient presents a problem of of premature ejaculation, one of several global techniques might be employed as treatment, such as the squeeze technique, modelling, conjoint sessions, desensitization in fantasy; all of which have proven to be effective in the treatment of premature ejaculation. Imagine the difference in treatment if it is discovered that the patient's problem of premature ejaculation is actually a problem of definition; the patient believes that he should be able to maintain an erection for thirty to forty minutes prior to ejaculation. A more suitable intervention, based on idiothetic assessment, would be re-education. While some argue that behavioral assessment is always conducted idiothetically (e.g., Barlow, 1980; Haynes & Wilson, 1979; Nelson & Hayes, 1979) research does not always follow suit (Emery & Marholin, 1977; cf. Haynes & Wilson, 1979)

Given the different results obtained from the idiothetic and nomothetic analyses, the idiothetic approach would seem to be critical in the development and in the evaluation of any treatment effects. For example, an intervention might be implemented with many subjects and the effects of this treatment on a number of relevant dependent measures might be monitored for each subject across an adequate number of situations and/or occasions. Only in this type of analysis can the efficacy of a treatment be assessed adequately. While this position is not new (e.g., Johnston & Pennypacker, 1980), the literature continues to be dominated by studies investigating treatment effects with group data. For example, the influence of a given treatment on depression, which may be precipitated by a number of variables, is often examined by employing a number of depressed people collapsed into a group without even examining the individual data as well. If a significant effect is observed, usually the conclusion is that this treatment is effective for depression. The results of the current study support the concern many researchers have long had about this. Because a group of depressed patients improved over a control group, does not mean that the treatment was generally effective at the level of the individual. Conversely, just because the treatment produced no effect at the level of the group, it does not necessarily mean that the treatment is inadequate at the level of the individual.

An idiothetic analysis might also be useful in identifying the most appropriate target for a research design which relies on a group analysis. For example, an idiothetic analysis might aid in developing a more homogenous population for study. Researchers studying the impact of a treatment on depression, for instance, might well want to sort out subjects into those with particular idiothetically identified response clusters, even if they plan to evaluate the treatment nomothetically.

Also, an idiothetic analysis might aid in understanding controlling variables when combined with clinical replication (e.g., Barlow, Hayes, & Nelson, 1984). Frequently in behavior therapy a patient presents a problem and in order to determine the controlling factors, behavior is monitored over some specified period of time. One might compare or examine these data with the data of other subjects who presented the same problem. Clients who improved with a given treatment and a given response cluster might indicate which treatment is most likely to be successful.

Future Directions

While the idiothetic-nomothetic debate has a long history, there continues to be much confusion regarding this distinction. There is most definitely some ambiquity regarding what comprises an idiothetic analysis. For example, Bem and Allen, (1974) had subjects rate whether they would show high or low variability on the traits conscientiousness and friendliness. They then tried to determine if the subjects who had classified themselves as low variability subjects were in fact more consistent than those that had classified themselves as high variability subjects. This contention was supported by independent raters who agreed with each other that people who saw themselves as generally consistent with regard to the particular dimension, were in fact consistent. Just the converse was noted for high variability subjects; raters found these subjects to be less consistent across time. This, however, is not an idiothetic analysis in the present sense. While two groups of subjects were divided according to self-reported information, the degree of consistency across time was addressed at the level of each group. As such, it does not speak to within-subject organization. That is, the degree to which individuals within each group are (in)consistent with respect to the measures is unknown. Bem and Allen's (1974) study, however, has been cited as exemplifying the power of idiographic methodologies (e.g., Kenrick & Stringfield, 1980).

One might also consider looking at the idiothetic-nomothetic distinction according to different universes of generalization. That is, nomothetic observations could be said to generalize across subjects, whereas idiothetic observations could be said to generalize across time or situations. This would be an error. Each type of analysis can be relevant to each universe of generalization. Specifically, nomothetic correlations might be across time and situations, while idiothetic correlations could easily be viewed across subjects. Future research in this area will need to concern itself with these distinctions. It will be necessary to understand, for example, that idiothetic (Lamiell, 1980) and idiographic (Allport, 1962) analyses, both of which grew out of the need to understand data at the level of the individual, are in fact different. While an idiothetic analysis is concerned with the individual, its ultimate goal is to understand the common elements shared by this individual with others so that general principles may be established. An idiographic analysis, on the other hand, is interested only in the unique world of the individual. Idiothetic analysis is similar to idiographic analysis in its concern for the individual, and similar to nomothetic analysis, in its concern with establishing general principles.

Although the notion of idiothetic analysis has been around for some time, there has been little empirical evidence to convince nomothetically oriented researchers that such an approach will yield information significantly different or better from traditional approaches. The data from the current study, along with that provided by others (e.g., Lamiell, 1981; Lamiell, et al, 1983; Lamiell, Foss, Larsen, & Hempel, 1983) provide preliminary evidence and represent a true break from traditional nomothetic designs for studying relationships. However, it will be necessary to continue to demonstrate empirically that certain fundamental questions cannot be resolved nomothetically.

The framework presented in the current study provides a starting point for examining behavior idiothetically. However, the empirical utility of this procedure awaits further systematic documentation. It will be necessary to demonstrate the findings of this study with other general classes of behavior, such as depression or social skills. One factor which may have contributed to the consistently high correlations at the level of the individual in this study is that the measures were quite specific to sexual arousal (e.g., how aroused are you, how aroused will you become on a 1-7 point scale). Future research might examine the effects of specific vs. nonspecific measures on covariation in an idiothetic and nomothetic framework. This line of research would be consistent with the current study in that efforts would be geared toward understanding factors which might be responsible for response covariation. It is well known, for example, that the measures employed in social skills studies are not always specific to social skills (e.g., speech disfluencies, eye contact, hand gestures), and therefore, may not show the same degree of relationship as observed with more specific dependent measures. The present study suggests that the more precise or specific the measures are, and when the contents of the measures overlap, the greater will be the likelihood of a relationship.

While there has been much discussion in the literature regarding idiothetic data, there has been little or no discussion regarding what to do with the vast amount of data usually generated by this procedure. Before idiothetic derived findings can be convincing, there must be statistical means of examining the data obtained from this analysis. Several projects relevant to the idiothetic-nomothetic debate have been discussed in this manuscript. With few exceptions, all seem to have retreated to nomothetic tactics to make sense out of idiothetic data. For example, in order to evaluate the cross-situational stability of the traits friendliness and conscientiousness, Bem and Allen (1974) converted 13 trait relative variables, six for the trait friendliness and seven for the trait conscientiousness, into a standard t score with a mean of 50 and a standard deviation of 10 across 64 subjects. Subsequently, for each individual, two standard deviations, one based on the six friendliness variables and one for the seven conscientiousness variables, were computed. These two standard deviations represented the degree to which a given subject was consistent for each of the two traits; the greater the standard deviation, the more inconsistent the subjects were across situations. For clarification, only the procedure relevant to the trait friendliness is discussed here. Using a t test, if was concluded that subjects who viewed themselves as consistent were significantly less variable than those who viewed themselves as less consistent. When the variables comprising the trait friendliness were correlated, the intercorrelations were higher for low variability subjects than for high variability subjects. On the basis of this finding, the authors concluded that apriori assumptions regarding one's degree of consistency may be a reliable index. However, it is not clear, with respect to the trait friendliness, how (in)consistent any given subject was. This is because the standard deviation, while determined for each subject, was entered into a $\underline{t}$ test to assess the difference between low and high variability subjects. Also, the mean for each of the six variables was entered into a group correlation matrix.

In another study, Harris (1980) employed an O-correlation procedure to assess the stability of trait relevant behavior. With this method, an individual's responses on one dependent measure at assessment session one, was correlated with his responses on this same measure at assessment session two. This method was employed on all dependent measures and for each subject in each of four groups (groups consisted of five to six subjects each). Only the median value for each group was reported and elaborated on. While the median values were high (range: .50 to .85) across all dependent measures, the overall range for individuals was quite varied (-.02 to .92). Despite the variability at the level of the individual, it was concluded, based on the high median scores, that these measures are stable.

In order to understand if subjects report of a given symptom is the product of his/her beliefs about the symptom, or the actual physiological state, Pennybaker and Epstein (1983) correlated physiological measures (heart rate, breathing rate, finger temperature) with verbal report (pulse rate, breathing rate, and finger temperature) across 14 different tasks. Initially, within-subject correlations were computed and several interesting subsidiary findings were presented. For example, for nine of the subjects, the warmer the fingers became, the cooler they reported them to be. Despite such data, when addressing the question of whether subjects used beliefs or actual physiological state in reporting on a given symptom, the authors returned to traditional group correlational procedures.

At least two investigators have examined data at the level of the individual. In one study, Epstein (1982) investigated the relationship among primary emotions, feeling states, stimulus situations, and behavioral impulses. Three kinds of correlations were computed. One involved the correlation of group data over occasions. In another, each subject's scores across time were converted initially to standard scores based on the subject's own mean. As such, each subject had a mean of zero, and a standard deviation of one on each variable. Correlations based on these standard scores for each variable, were computed across all subjects. The rationale underlying this procedure is that these correlations are based on intrasubject variation, and are equivalent to the average of the within-subject correlations based on all subjects (Epstein, 1982). In the third procedure, correlations were based on individual intrasubject data over occasions.

Although these three procedures were employed, only the data derived from the intersubject, and group composite intrasubject correlations were considered relevant to evaluating the relationship among the measures. While many of the relationships were significant for both procedures, the intersubject correlations were generally of greater magnitude. The "true" intrasubject data were discussed only in reference to how it might be used in an intersubject design, rather than as a source of data that might be compared with group data.

In a theoretical paper, Lamiell (1981) proposed an interactive model to evaluate idiothetic data. As such, any assertions about an individual on a given attribute is made with reference to the extremes of what might have been asserted given the measure and the attribute. In relation to the current study, this means that a subject's score on say, the subjective units of arousal measure, which was made on the basis of a 1-7 point scale, would be based on the actual self-report of how aroused he is, the minimal possible arousal level, which is "1" and the maximal possible arousal level which is "7." Thus, an individual's score reflects the given attribute, relative to how much the score could have reflected the attribute given the constraints of the dependent measure. As such, each subject's score is independent of any other subject's score.

These studies, while claiming to address the issues pertinent to the idiothetic-nomothetic debate, have in fact, often ignored (e.g., Bem & Allen, 1974) or deemphasized (e.g., Epstein, 1982; Harris, 1980; Pennybaker & Epstein, 1983) idiothetic data. As such, the present study, while depending to some extent on some rather standard techniques for evaluating data, had to develop new means of examining data at the level of the individual, as well as means of comparing idiothetic to nomothetic data.

Several standard techniques (e.g., *t* test, chi-square, correlational) frequently employed in studying the relationship among measures were applied to both the individual and group data. For example, standard correlational procedures seemed as applicable to evaluating relationships within-subject across time, as to assessing the relationships among measures across subjects. Because the application of these standard procedures to within-subject data is new, future research will be required to address some basic questions. For example, the data yielded at the individual level of analysis are weakened somewhat by the fact that the influence of chance factors on the data are not known. Specifically, given seven dependent measures, five of which are verbal measures, how many are related merely by chance. Before within-subject correlation coefficients can be evaluated critically, it seems important to know how many of these correlations were high by chance. It is unlikely that the correlation coefficients observed in the current study were all due to chance alone, especially given that ninety-percent were above .50.

Another means of evaluating idiothetic and nomothetic data involved coding the pattern of a given measure across the four assessment sessions, and comparing this pattern with the pattern of another measure. This method was particularly beneficial because of its simplicity, thus making it easy for independent observers to evaluate a measure, as well as for comparing two measures and for comparing group data with individual data. Also useful was that it aided in managing a large sum of data. If patterns and pattern relationships are going to be important in evaluating the quality of individual and group data, then a more empirical mean of comparing the relationships will be necessary. One area worthy of further investigation has been offered by Harris (1975) called a profile analysis. The complexity of the computations and the lack of computer program precluded the use of this procedure here. Furthermore, a profile analysis is predicated on group data. Its strength, however, is in the fact that it might be used to test for two sources of differences between two subjects' profile; a difference in the level of two curves and the pattern of two curves.

Relevant to understanding patterns is an understanding of level differences; how different is a given subject's performance on one measure from his performance on another measure, or how different two subjects are in their level of responding on the same measure. This latter question is particularly relevant to the current study since it was hypothesized that between-subject level differences would produce the idiothetic-nomothetic differences. In the current study, for lack of a better method, level differences were evaluated at the group level only (e.g., the mean difference between public and private subjects). However, recently Sakheim, Barlow, Beck, and Abrahamson (1984) offered a means of understanding level differences. These authors suggest that the level of a measure be determined by the obtained score on that measure, relative to how well the subject could have performed on that measure. For example, in the current study, amount of arousal was determined by percentage of maximal arousal (erection measure on each slide/full erection) (100). Sakheim, et al suggest that all dependent measures be scored in this manner (also suggested by Lamiell, 1981). When the value of two measures are within a given percentage of each other, say ten percent, then the difference between the two measures in their level of responding would be judged to be nonsignificant. Because of its simplicity and ability to reduce a vast amount of data meaningful, future research would do well to investigate this procedure further.

In the current study, several methods were used for evaluating variability in the data, both among subjects and sessions. One method involved examining the data within the multimethod, multicontent, multibehavior framework. This method clearly demonstrated how tentative the relationship between two measures can be across sessions. Further analysis of the variability was shown by blocking the correlation coefficients into Low (correlations below .49), Medium (correlations between .50-.69), and High (correlations at or above .70) ranges. Still another method examined the differences between the highest and the lowest correlation coefficient. While each of these methods facilitated understanding variability in the data, what would have been more useful is a method to isolate the source of this variability.

Another area which warrants further investigation has to do with the public-private dimension. There was a clear distinction between public and private subjects to male slides in the present study. Finding an effect for these variables is not novel, but has been demonstrated in many studies (e.g., Good, 1973; Rosenfarb & Hayes, 1984). What has not been delineated adequately, however, are the specific factors responsible for this effect. While suggestions have been offered, these remain tentative at best. The specific manner in which others influence an individual's behavior seems particularly pertinent in a clinical setting.

Summary

The present study investigated the relationship between two classes of measures associated with sexual arousal within an idiothetic and nomothetic framework. While both of these approaches seek to establish general principles of behavior, they differ in the way in which this goal is obtained. An idiothetic analysis focuses on a number of individuals across time and/or situations, while a nomothetic analysis focuses on a group, whose performance on some relevant dependent measure, may or may not be sampled on a number of occasions.

While the idiothetic-nomothetic debate has its origin in the personality literature and continues to be debated there, several issues make this distinction relevant to the behavioral assessment literature. For example, while it is clear that patterns of synchrony and desynchrony among measures vary from subject to subject, it is not clear how these different patterns surface at the level of the group. Also, it is not clear how different measures sampling the same global behavior, cling together under various conditions, such as treatment.

It was hypothesized that the relationship between subjective and physiological measures of sexual arousal would differ depending on the type of analysis employed in evaluating this relationship. This hypothesis was supported in all areas sampled (e.g., statistically and descriptively). While not statistically significant, the greater magnitude of correlation was invariably observed in data evaluated idiothetically as compared to nomothetic data.

An implication of this finding is that data yielded at the group level of analysis may lead to conclusions quite distinct from those observed at the level of the individual. This suggests that treatment effects, which are usually e-valuated nomothetically, frequently may not be relevant to many of the subjects in that group or the general population for that matter.

This finding allows for a more critical evaluation of nomothetic procedures. Specifically, until recently the difference between idiothetic and nomothetic data has been based on logic rather than empirical findings. As such, there was no way to convince nomothetically oriented reseach-ers that idiothetic strategies would yield better information, or ultimately lead to different conclusions regarding behavior.

The finding of the current study suggests a need to re-evaluate how relationships are discussed. Traditionally, it was assumed that a strong relationship observed at the group level of analysis would also be observed at the level of the individual. The present study clearly points out how erroneous this thinking may be. What might be synchrony at the level of the group may not be so at the level of the individual.

The results of the present study also have implications for future research. These findings may turn out otherwise for different subjects and measures, especially where measures are nonspecific. As such, it seems important to evaluate the two methods of data analysis using other measures, especially less specific measures as are those frequently found in social skills and anxiety studies, and also with a different population, such as a more clinical one.

A vast amount of data are generated at the individual level of analysis. There is a need to make this data more manageable. Future research might focus attention toward developing means to evaluate idiothetic data more thoroughly, and even more critical at this time, are procedures that will allow for a direct comparison of the two procedures.

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APPENDIX A

DEPENDENT MEASURES

Appendix A-1

Subjective Units of Arousal

Please rate the slide that you have just seen according to how sexually aroused you became while viewing it. In rating this slide, please circle one of the numbers provided below. On this scale '1' stands for 'not aroused at all', while '7' means 'extremely aroused'.

1 2 3 4 5 6 7

Appendix A-2

Attraction Level Survey

Below are a series of descriptive scales. The purpose of these scales is to examine your initial feelings, thoughts, or reactions upon viewing a slide. In completing this form, please make your decision on the basis of how you feel. You are to indicate this by circling the appropriate number (1-7). The direction toward which you circle, of course, depends upon which of the two ends of the scale seems most characteristic of the slide which you are judging. If your feelings, thoughts, reactions, are neutral then you should circle a four. Be sure to make a circle for every scale. Never place more than one circle on a single scale. Do not puzzle over individual items. It is your first impressions, the immediate 'feelings' about the slide that we want. On the other hand, please do not be careless, because we want your true impressions.

A. Friendly.......1 2 3 4 5 6 7.......Unfriendly

B. Not Sexy.......1 2 3 4 5 6 7.......Sexy

C. Beautiful......1 2 3 4 5 6 7.......Ugly

Appendix A-3

Predicted Time to Arousal

Please rate this photograph according to HOW MUCH TIME you think that it will take you to become sexually aroused to this picture were it shown to you in slide form. Please make your decision according to the scale provided below:

___1. Immediately

___2. Five to ten seconds

___3. Ten to twenty seconds

___4. Twenty to thirty seconds

___5. Thirty to sixty seconds

___6. One to two minutes

___7. Two minutes or longer

Appendix A-4

Predicted Amount of Arousal

Please rate this photograph according to how sexually aroused you believe you would become to this picture were is shown to you in slide form. In making your decision, please use the scale provided below. On this scale, '1' stands for 'I will not be aroused', while '7' means 'I will become extremely aroused'.

___1. I will not be aroused

___2.

___3.

___4. I will be somewhat aroused

___5.

___6.

___7. I will become extremely aroused

Appendix A-5

Predicted Time of Viewing

Please rate this photograph according to the amount of time that you would spend looking at this stimulus. Please make your decision according to the scale provided below:

___1. No time at all

___2. Five to ten seconds

___3. Thirty seconds

___4. One to five minutes

___5. Five to twenty minutes

___6. Twenty to thirty minutes

___7. Thirty minutes or longer

APPENDIX B

THE SELECTION AND THE RANDOMIZATION OF SUBJECTS, EXPERIMENTAL CONDITIONS, AND STIMULUS MATERIALS

Appendix B-1

The Rating Scale Employed in the Selection of the Slides and the Photographs

Please rate this slide/photograph according to its sexual arousability. That is, how sexually arousing is the subject on this slide/photograph. In making your decision , please use the scale provided below. On this scale '1' stands for 'not arousing at all', while '7' means 'extremely arousing'.

1 2 3 4 5 6 7

Appendix B-2

The Order in Which Subjects Participated in Each Experimental Condition

Subjects	Condition	Subjects	Condition
1	Private	11	Private
2	Public	12	Public
3	Public	13	Public
4	Private	14	Private
5	Private	15	Public
6	Public	16	Private
7	Public	17	Private
8	Private	18	Public
9	Private	19	Private
10	Public	20	Public

Appendix B-3

The Order in Which Subjects Participated in Each Phase at Each Experimental Session

Subjects	Experimental Sessions 1	2	3	4
1	M P V[1]	P M V	V P M	M V P
2	V M P	M P V	V P M	P M V
3	M V P	V P M	P V M	P M V
4	V M P	M P V	M V P	V M P
5	P M V	M P V	M P V	M P V
6	P M V	V P M	M P V	M P V
7	M P V	P M V	V M P	P M V
8	V M P	M V P	M P V	V P M
9	M P V	M P V	P M V	M V P
10	P V M	P V M	P V M	V M P
11	V P M	M V P	P M V	M P V
12	M P V	M P V	V P M	P M V
13	V P M	V P M	V M P	M P V
14	M P V	P V M	V M P	M P V
15	M V P	V P M	M P V	M P V
16	P M V	V M P	V M P	M P V
17	M V P	P V M	V P M	P V M
18	P V M	M P V	P V M	M V P
19	M P V	P M V	P V M	P V M
20	V M P	V M P	P M V	P M V

[1] M = Motoric phase, P = Physiological phase, V = Verbal phase

Appendix B-4

The Order of Presentation of Each Slide for Each Subject and for Each Experimental Session

Subjects	Session One	Subjects	Session Two
1	F A E B C D[1]	1	E B D C F A
2	B A F E C D	2	A F D C B E
3	D B C E A F	3	B D C F E A
4	F C A D B E	4	C E D A B F
5	A E B C D F	5	F D A C E B
6	B C D F A E	6	E B D A C F
7	E B C D F A	7	C E D B F A
8	C D F B E A	8	F C E B D A
9	D B C F A E	9	B E A D C F
10	C B D E A F	10	B D C E F A
11	E B F D A C	11	F A B D E C
12	A F C E B D	12	C E D A F B
13	F B E D A C	13	D C E A F B
14	A E C D B F	14	B F A D C E
15	B E C D A F	15	E B C F D A
16	C A F D E B	16	C D B E A F
17	E B D C A F	17	F E A D B C
18	F A D C B E	18	A B E C D F
19	B D C F E A	19	E C F B D A
20	C A E D B F	20	A F D C E B

Appendix B-4
(Continued)

Subjects	Session Three	Subjects	Session Four
1	E B F A D C	1	F C B E A D
2	F E A D B C	2	B A F C D E
3	D B A E C F	3	C E B D A F
4	B D F C E A	4	A F C E B D
5	D A F C B E	5	E B D A C F
6	E D C A F E	6	C E A B D F
7	A E B D F C	7	F D C A E B
8	C F D E B A	8	B C E A F D
9	D B E A C F	9	D A E C F B
10	C E A F B D	10	E D A F B C
11	F A C E B D	11	E B D F A C
12	B D E A F C	12	C F B E D A
13	F C D B A E	13	A E C D F B
14	A F B E D C	14	F B D C E A
15	D A E C B F	15	B C E A D F
16	A D B F C E	16	D A F B C E
17	F E B C D A	17	C F A D B E
18	E B F A D C	18	A D F B C E
19	A E B C D F	19	F B D A E C
20	B C D F A E	20	A E C F B D

[1] A B C = Erotic Slides of Females
D E F = Erotic Slides of Males

Appendix B-5

The Order of Presentation of Each Slide
For Each Subject and For Each Experimental Session
(Additional Four Sessions)

Subjects	Session Five	Subjects	Session Six
3	F C D B A E[1]	3	E B D C F A
4	B D C E F A	4	F E A B D C
6	A E D B F C	6	E D C B A F
10	E B D F A C	10	A E B D F C
11	D B C E A F	11	E B F A D C
12	A F E B C D	12	B A F C D E
16	C D F B E A	16	C E A B D F
17	B C D A F E	17	F B D C E A

Subjects	Session Seven	Subjects	Session Eight
3	C A E D B F	3	A E C F B D
4	A B C D F E	4	A E B C D F
6	A F D C E B	6	C E B D F A
10	B E A C D F	10	A F B E D C
11	C D F B E A	11	D A E C F B
12	B D C F E A	12	C A F D E B
16	A E D B F C	16	C E F B D A
17	D C E A F B	17	B A E C F D

[1]A B C = Erotic Slide of Females
D E F = Erotic Slide of Males

Appendix B-6

The Order in Which Subjects Rated Each Verbal Scale for Each Assessment Session

Subjects	Assessment Sessions 1	2	3	4
1	A B C[1]	C A B	B A C	C A B
2	C A B	A C B	C A B	B C A
3	A C B	A C B	A B C	A B C
4	A B C	A B C	A C B	A C B
5	B A C	C B A	C A B	B C A
6	A C B	C A B	A B C	A B C
7	B C A	A B C	B A C	C B A
8	B A C	A C B	A C B	A C B
9	C A B	B C A	A B C	C B A
10	B C A	A B C	C B A	B A C
11	C B A	C A B	A B C	A B C
12	A C B	C B A	A C B	A C B
13	A B C	B A C	B A C	C B A
14	C A B	C B A	B C A	A C B
15	A C B	A C B	C B A	A C B
16	B A C	C B A	A C B	A C B
17	A C B	A C B	C A B	C B A
18	B C A	B C A	B C A	B C A
19	C A B	C B A	A B C	C A B
20	A B C	A C B	C A B	B A C

[1]A= Predicted Amount Arousal
B= Predicted Time to Arousal
C= Predicted Time of Viewing

Appendix B-7

The Order in Which Subjects Rated Each Verbal Scale for Each Assessment Session

(Additional Four Sessions)

Subjects	Assessment Sessions 5	6	7	8
3	C A B	A C B	C A B	B C A
4	A B C	B C A	B A C	A C B
6	C B A	C B A	A C B	B C A
10	C A B	A C B	C B A	B A C
11	A C B	C B A	B C A	A B C
12	B A C	B A C	A C B	C A B
16	C A B	B C A	B A C	C B A
17	B C A	A C B	C B A	B C A

[1]A = Predicted Amount of Arousal

B = Predicted Time to Arousal

C = Predicted Time of Viewing

Appendix B-8

The Order in Which Subjects Rated Each Photograph Within Each Verbal Scale

Ss[1]	AS[2]	Predicted Amount	Predicted Time	Predicted Viewing
1	1	C B F D E A	A D B F C E	D A C F E B
	2	C B F D E A	B E A F C D	F B C A D E
	3	A D E B C F	C A D F E B	F E C D B A
	4	D E C B F A	E C A D B F	B F E C D A
2	1	C A D B E F	D F A B C E	B C E A F D
	2	D E C B F A	A E C D B F	E C A D B F
	3	A E F D B C	C D F A B E	F D A E B C
	4	E A F B D C	C A B E F D	B C E F A D
3	1	E F A D B C	C E F A D B	F B C A E D
	2	C D E B F A	E F B A D C	A D C B F E
	3	F A B C D E	E C B F D A	A B C F D E
	4	C B F E A D	F B C D A E	A D B E C F
4	1	D F C E B A	B A E D F C	E A D F C B
	2	D C A F B E	D E C A F B	A C F E D B
	3	A F E B D C	F B D E A C	C D F E B A
	4	B A C F D E	E D F B C A	C A D E B F
5	1	A F E B C D	C D F A E B	C F B A D E
	2	C F D A E B	E D B F A C	B A D C E F
	3	B C E A F D	C F D B A E	E D F B C A
	4	C D B F A E	C E B A F D	A B C D F E
6	1	A C E B D F	C A D B E F	E D B C F A
	2	B F A F C D	B C D E A F	A E D F C B
	3	C F D A E B	A E B D C F	F B E A D C
	4	D E C F A B	A D C E F B	E B F D C A
7	1	D A F C B E	A C D B E F	B E C F D A
	2	E F A C D B	F E A C D D	C B F D E A
	3	A B F E D C	B C A D E F	B F D A F C
	4	D B C F E A	F D B E C A	A D B F C E
8	1	F E D C B A	A C B D E F	A B C D E F
	2	F D A B C E	A B C E F D	E D A F B C
	3	C B A E D F	A E D F C B	F C B D A E
	4	A D F C E B	C F E B A D	E B D F A C

Appendix B-8

(Continued)

Ss[1]	AS[2]	Predicted Amount	Predicted Time	Predicted Viewing
9	1	C F B A E D	B E F C D A	A B D F C E
	2	A F E B D C	F E B C A D	C B A D F E
	3	A C E B D F	D E B F A C	C A B D E F
	4	E C D A B F	A F B C E F	C F A E D B
10	1	A E C D B F	D C E F A B	B D C E A F
	2	E D A B C F	F B C A D E	A B D F E C
	3	E F B D A C	B D A C F E	B E A F C D
	4	D A F B C E	B F E D C A	E C B D A F
11	1	F C B E A D	A E F D C B	F C E A D B
	2	A C D B F E	B F C A E D	F D B C A E
	3	C F D B A E	B D F C E A	D C F E A B
	4	B E D C F A	A C F D B E	B F A C D E
12	1	B E A C F D	C A B E F D	E C A F C B
	2	D F E C B A	A B D F C E	D C B A E F
	3	C D F B A E	C B E A D F	C E B A D F
	4	D F B E A C	D E C A F B	D B A C F E
13	1	E D B A C F	A B C D F E	D F C E B A
	2	C B A E F D	A B E D C F	F B D E A C
	3	F C B D E A	A B D F C E	E D F B A C
	4	D C E F A E	C F D A B E	B C F E D A
14	1	F D B A F C	C F D B A E	D A C E F B
	2	B A F E D C	B A D C E F	D B C E A F
	3	F C B B E A	E A D F C B	F C B E A D
	4	F A B C D E	C E F A D B	B E C A D F
15	1	C E B F A D	B D F A E C	D A C E B F
	2	A F E B C D	E C B F D A	C A B F E C
	3	E D A B F C	E B D C F A	B A D E F C
	4	D F E C B A	D F A B C E	B A F C E D
16	1	B C F D E A	C F B E A D	A C B D F E
	2	A C D B E F	E F A C D B	B D F E A C
	3	B E C F D A	C A D F B E	D E C F A B
	4	D A C B E F	E C B F D A	A E D B C F
17	1	C F E D B A	D E B F C A	A B C D E F
	2	A E D C F B	A B E D C F	F C B D E A
	3	C D F B E A	A D C F B E	B E F D A C
	4	C E B F D A	F D B E C A	A D F B E C

Appendix B-8
(Continued)

Ss[1]	AS[2]	Predicted Amount	Predicted Time	Predicted Viewing
18	1	A E D B F C	A B C F D E	C F B D E A
	2	D E F A C B	D E F B A C	C A B F E D
	3	A C D E B F	E C D F B A	A C D F B E
	4	B A C F D E	B D C F E A	A F D B B C
19	1	F A B D C E	E F A B D C	E D F A B C
	2	D C F A E B	B D C F A E	E B D C F A
	3	C A B E F D	B F E D A C	D C B E F A
	4	C F A B E D	C B F D A E	A F E D B C
20	1	A C D F E B	F C D E B A	C B A D E F
	2	E B D A C F	B E D A C E	F D E C A B
	3	F E D C B A	B C E D A F	A B C D E F
	4	A D B E C F	F C E B D A	E D F A B C

[1]Ss = Subjects   [2]AS = Assessment Sessions

Appendix B-9

The Order in Which Subjects Rated Each Photograph Within Each Verbal Scale (Additional Four Sessions)

Ss[1]	AS[2]	Predicted Amount	Predicted Time	Predicted Viewing
3	5	E F A D B C	C B F E A D	A B D F E C
	6	A C B F D E	C F E A D B	B D A F C E
	7	A F C D E B	C B F D A E	D A C E B F
	8	A C D F E B	D E B A C F	F C D A E B
4	5	D C E B F A	D E F A C B	A B F D C E
	6	B F E A C D	F E B C D A	C A B F E D
	7	A D C F E B	E B D A F C	F C B D A E
	8	C F A E D B	F B A E D C	E B C D A E
6	5	D C B A E F	B A D F C E	C F D B E A
	6	E A F D B C	A B C D E F	D C F E A B
	7	F C D B E A	D E C A B F	E A C D B F
	8	A C D B F E	E A C D B F	B F E A C D
10	5	C B A D F E	D F C E B A	F D A C B E
	6	B A F D E C	C F B A E D	F B C A E D
	7	C B D F A E	C D F B A E	B C A F E D
	8	B F C A E D	F A E D B C	F D E B A C
11	5	C A B E F D	A B E F D C	D F E A B C
	6	C B D E F A	A B E F D C	E F D B A C
	7	E B D A C F	F B E D A C	B D A C F E
	8	C E D A F B	F B A D E C	B F A D E C
12	5	A E D F B C	A C F E D B	C B F D E A
	6	B D F C A E	E B F D C A	F E B D C A
	7	D F C B E A	C B D F E A	A E D F C B
	8	F D C B E A	C B E A F D	A F C E B D
16	5	B D E F A C	A C B F E D	D E C F A B
	6	D C E B A F	B A F E D C	E C B D A F
	7	B C A D F E	C A D F E B	A C D E F B
	8	F D B A E C	A C B D F E	E B E D F A
17	5	C E A B D F	C A D B F E	C E F A D B
	6	B D A F E C	D C E F A B	B D F A C E
	7	A D E F C B	E B A C F D	F C B E D A
	8	A C D E F A	F D A E B C	B D C E F A

[1]Ss = Subjects [2]AS = Assessment Sessions

Appendix B-10

The Locations of the Male and Female Slides

During the Motoric Phase at Each Assessment Session

Subjects	Assessment Sessions 1		2		3		4	
	R	L[1]	R	L	R	L	R	L
1	F	M[2]	M	F	F	M	M	F
2	F	M	F	M	M	F	M	F
3	M	F	F	M	M	F	F	M
4	F	M	M	F	F	M	M	F
5	F	M	M	F	F	M	F	M
6	M	F	F	M	M	F	M	F
7	M	F	M	F	F	M	F	M
8	F	M	M	F	F	M	F	M
9	M	F	F	M	M	F	M	F
10	M	F	M	F	M	F	M	F
11	F	M	M	F	M	F	M	F
12	F	M	F	M	F	M	F	M
13	M	F	F	M	F	M	F	M
14	M	F	M	F	M	F	F	M
15	F	M	M	F	M	F	M	F
16	M	F	M	F	F	M	M	F
17	M	F	M	F	M	F	F	M
18	F	M	M	F	M	F	F	M
19	F	M	F	M	M	F	M	F
20	M	F	M	F	M	F	M	F

[1]R = Right-hand side, and L = Left-hand side

F = Female slides,and M = Male slides

APPENDIX C

INSTRUCTIONS TO SUBJECTS

Appendix C-1

Instructions Given to Public Subjects During The Initial Screening Session

This experiment will involve your viewing a series of slides and photographs of sexually explicit materials, and segments of an erotic film. The experiment is divided into three phases--verbal-cognitive, physiological, and motoric. In the verbal phase you will be asked to rate the photographs according to various scales. In the motor phase you will be asked to view a series of slides which you will select by performing a task on a machine. In this case it is pressing a lever. During the physiological phase you will be asked to wear a penile strain gauge while you view a series of slides. You will place the strain gauge on your penis in the privacy of one of the rooms. This is what the strain gauge looks like. (*Show subject a strain gauge*.) The specific instructions for a phase will be given by an experimenter at the beginning of each phase.

You will participate in each phase of the experiment in a different room. During the experiment you will be the only person in a room. Each room is equipped with an intercom which will allow you to talk with the experimenter in the next room, and vice versa. If you should have questions, please do not hesitate to stop and ask the experimenter.

As mentioned, there will be three experimental phases. At the beginning of each phase you will be given a series of forms to complete during that phase. The forms are in a particular order. As you progress through the phase, it is important that you keep the forms in the order in which they were given to you. At the end of each phase you are to turn in the completed forms to the experimenter. In order that we may keep each person's data together it is necessary for you to select a code number to use on all of the forms that you complete in this study. Do not place your name on any of the forms. Most people select the last four digits of their social security number. Whatever code you select, please use it on all forms throughout the experiment.

When you have completed the last session of this experiment, I will explain to you the purpose of this investigation. If you leave your name and address at the end of the last session, I will also send you a copy of the results. It is important that you do not discuss this experiment with any of your friends until all of the sessions are completed. A discussion with friends may bias the results.

Appendix C-1
(Continued)

Do not be alarmed if you do not remember everything that I have just said. Many of these instructions will be repeated by the experimenter at the beginning of each phase. Do you have any questions at this time? If you consent to participate in this study, please sign this form. (Hand subject the consent form.) Also, I need for you to complete this form. (Give subject the Sexual Orientation Survey.)

If you have no questions, I will now introduce you to the experimenter who will be in charge of the session today.

Appendix C-2

Instructions Given to Private Subjects During The Initial Screening Session

This experiment will involve your viewing a series of slides and photographs of sexually explicit materials, and segments of an erotic film. The experiment is divided into three phases--verbal-cognitive, physiological, and motor. During the verbal phase you will be asked to rate photographs according to various scales. During the motor phase you will be asked to view a series of slides which you will select by performing a task on a machine. In this case it is pressing a lever. During the physiological phase you will be asked to wear a penile strain gauge while you view a series of slides. You will place the strain gauge on your penis in a private room. This is what the strain gauge looks like. (Show subject the strain gauge.) This is how you place it on your penis (Demonstrate by using one of your fingers), with the wires going away from you. It is not painful, or dangerous, and it has been sterilized.

You will participate in each phase of this experiment in a different private room. These rooms will be labeled 'A', 'B', and 'C'. At the end of this interview, I will inform you of the order in which you will participate in each phase. The instructions for each phase will be located on a table in each room. Since you will be on your own, it is very important that you read these instructions very carefully.

During the physiological phase, room labeled A, there will be an experimenter in the adjacent room. He will not know who you are, nor will he know anything about you. You will not see him, nor will he be able to see you at anytime during the experiment. This experimenter has been trained in the experimental procedures, but he does not know the nature of this investigation, nor the meaning of the data which he is collecting. If you should have questions regarding this phase, or any phase, you are not to ask the experimenter, but you are to come back to this interviewing room and ask me. I do not want the experimenter to ever see you. This will further ensure the confidentiality of the information that you provide and perhaps make you more comfortable in giving your answers.

I am very interested in your true impressions as you view the slides and the photographs. For this reason, the information that you provide will remain private. I do not want to be able to trace your data back to you. Therefore, you are to select a code number to use on all of the

Appendix C-2

(Continued)

forms that you complete during this experiment. Do not put your name on any of the forms. Do not tell me the code that you have selected. The code number that most people have used in similar experiments has been a letter and three numbers. Whatever the code that you select, you are to use it on all of the forms that you complete throughout this session, and throughout future experimental sessions. Just in case you forget your code number between now and the next session, I would like for you to write it down on something. Remember, that you are to use this code number on all forms. The purpose of the code number is so that I will be able to keep all the information provided by an individual together without knowing who provided it.

As mentioned, there will be three experimental phases. At the beginning of each phase, you will be given a series of forms. At the top of each form there will be a special code number. This code has nothing to do with you. It merely lets me know which slide was rated on that form. As you progress through each phase of the experiment, it is very important that you keep these forms in the order in which they were given to you. At the conclusion of each phase you are to place your completed forms in the sealed box provided in that room. At this time you may place the forms in the box in any order that you desire. There will be forms in this box completed by other subjects. The forms will not be removed from this box until the entire experiment is completed.

At the completion of the physiological phase, the experimenter will push a recording form under the door. At this time you are to write your code number on it and place it in the box.

Do not be alarmed if you do not remember everything that I have just said. Many of these instructions will appear in written form in each room that you will be visiting. It is important to remember that all the information that you provide is confidential. And that it will be almost impossible to trace your information back to you. Also, it is important that you remember that you may withdraw from this experiment at any time. Do you have any questions? If you consent to participate in this experiment, please complete this form. (Give subject the consent form.)

Appendix C-2

(Continued)

Are you ready to begin? Remember to use the same code number on all forms, but do not tell me the code number that you have selected. Again, it is not important that I be able to associate the information that you provide back to you. I am interested in your true impression and the sum of all information collected from all subjects in this experiment.

When you have completed the last session of this experiment I will explain to you the purpose of this investigation. I will also send you a copy of the results if you leave your name and address at the end of the last session. Since many people from all over campus and Greensboro will be participating in this study, it is important that you do not discuss it with anyone until all the sessions are completed. A discussion with a potential participant might seriously bias the results.

Now let us begin. (Direct subject to the experimental room.) Remember to come back to this room if you should have any questions.

Appendix C-3

Instructions for The Physiological Phase

Private Subjects - First Session

This is Part I of the physiological phase. Prior to taking a seat, please go and change the sign on the door to read DO NOT ENTER, EXPERIMENT IN PROGRESS. If you like, the door may be locked from the inside. Now take a seat in the chair facing the screen.

In order to monitor your physiological responses, it will be necessary for you to wear a penile strain gauge during this phase of the experiment. The strain gauge is located in the plastic bag on the left arm of your chair. This is a very fragile piece of equipment; therefore, it should be handled with extreme care. Do not remove the strain gauge from the plastic bag yet. You are to place the gauge on the shaft of your penis so that the wires are going away from you. The manner in which you place the strain gauge on was described to you during the earlier screening session. Make sure that this gauge is not touching any articles of clothing, and once it is in place, please do not touch it with your hands. Since the gauge is very sensitive to any movements, please try to be as still as possible, especially during the time that a stimulus is being projected onto the screen in front of you.

In this portion of the experiment you are going to see segments of a film. The film will begin when you press the telegraph key located on the corner of the table. (<u>Take a few seconds to determine the exact location of this key</u>.) During this portion of the physiological phase, the following sequence of events will occur:

a. You will turn the light switch off. This switch is located on the wall near the door.

b. Remove the strain gauge from the plastic bag and place it on your penis in the manner described earlier.

c. Sit back in the chair. When you are comfortable, press the telegraph key to signal that you are ready to begin.

d. Sit back in the chair and watch the film. While watching the film you are to imagine yourself interacting with the subjects on the film.

Appendix C-3
(Continued)

e. Once you have achieved a full erection, you are to press the telegraph key again.

f. When the film projector goes off, you are to read the instructions for Part II of this phase. DO NOT TAKE OFF THE PENILE STRAIN GAUGE.

Are you ready to begin this portion of the physiological phase? If you are ready, press the telegraph key. <u>Do not forget to signal the second that you have achieved a full erection by pressing the telegraph key</u>.

<u>DO NOT READ THE NEXT PAGE UNTIL THIS PORTION OF THE EXPERIMENT IS OVER</u>

Appendix C-3

(Continued)

<u>Instructions for The Physiological Phase - Part II</u>

This is Part II of the physiological phase. The strain gauge should still be on. Check to see if there are any articles of clothing touching it. If so, correct this situation.

During this portion of the physiological phase, the following sequence of events will occur:

a. A slide will be projected onto the screen. Again, you are to imagine yourself interacting with the subject on the slide. The slide will be projected for two minutes. You are to watch the slide during the entire time that it is being projected.

b. After two minutes of watching the slide, you will hear a bell. At the sound of the bell you are to rate the slide on one of the forms located on the table on your right. (<u>Take a look at the forms. Read the instructions on them at this time</u>.) All of the forms are identical. There are six forms, one form for each of the six slides that you will see. The forms have been arranged in the same order as the slides will be shown; therefore, <u>do not take</u> these forms out of order. The slide will continue to be projected while you rate it. You will have 60 seconds to complete the form while the slide will continue on the screen. At the end of 60 seconds the slide will disappear and a blank slide will appear.

c. Once the blank slide appears, you are to sit back and relax. In a few seconds a new slide will appear on the screen and the procedure will begin again.

d. After the last slide has been shown and you have completed the last form, you are to take off the penile strain gauge.

e. Get dressed and place the strain gauge on the table behind you. Make sure your code number is on every form. Now place all of your completed forms in the sealed box located on the table behind you.

f. Now wait. The experimenter will come to the door and push a form under it. You are to place your code number on this form and then place it in the

Appendix C-3

(Continued)

sealed box along with your forms. Once you have placed this form in the box, you are to go to the next experimental phase (room B or C) or come back to the screening room.

Now you are ready to begin this portion of the physiological phase. Have you read the instructions on the forms? Do you understand how to complete these forms? Is the penile strain gauge in place? If you have any questions, it is important that you ask them now since you will be unable to leave the experimental room once the slides are being projected. If you are ready, press the telegraph key.

Appendix C-4

Instructions for The Physiological Phase for All Sessions Following The First One - Private Subjects

This is the physiological phase. Prior to taking a seat, please go and change the sign on the door to read DO NOT ENTER, EXPERIMENT IN PROGRESS. If you like, the door may be locked from the inside. Now take a seat in the black recliner facing the screen.

In this experimental phase you will see a series of slides projected on the screen directly in front of you. In order to monitor your physiological responses to these slides it will be necessary for you to wear a penile strain gauge. The strain gauge is located on the left arm of your chair in the plastic bag. This is a very fragile piece of equipment and should be handled with extreme care. Now remove the strain gauge from the container. You are to place the gauge on the shaft of your penis so that the wires are going away from you. Place the strain gauge on in the same manner as you placed it on the last time that you were here. Make sure that the gauge is not touching any articles of clothing and once it is in place, do not touch it with your hands. Since the gauge is very sensitive to any movements, please try to be as still as possible, especially during the time that a slide is being projected onto the screen.

On top of the table are six forms. They have a paper clip on them. All six forms are identical. There are two rating scales on each form. Pick up these forms and read the instructions for each scale very carefully. Do not take these forms out of the order in which they were given to you. Now place your code number at the top of each of these forms. Remember to use the same code number that you used the last time that you were here. Again, it is important that you keep the forms in the order in which they were given to you.

During this phase the following events will take place. A slide will be projected onto the screen. You are to imagine yourself interacting with the subject on the slide. This slide will be projected for two minutes. You are to watch the slide during the entire time that it is being projected. Following the two minute slide exposure, you will hear a bell. At the sound of the bell you are to rate the slide on one of the forms located on the table next to you.

There are six forms, one form for each of the six slides that you will see. The forms have been arranged in the same order as the slides will be shown. REMEMBER, do not take

Appendix C-4

(Continued)

these forms out of order, and to rate each slide on a different form. You have 60 seconds to complete the form while the slide is still being projected. At the end of the 60 seconds the slide will disappear, and a blank slide will appear. At this time you are to sit back and relax. In a few minutes a new slide will appear and the procedure will begin all over again.

After the last slide has been shown, and you have completed the last form, you are to take the penile strain gauge off. Now get dressed and place your completed forms in the sealed box. At this point you may place the forms in the box in any order that you like. Make sure that your code number is on every form. Now wait for the experimenter to push your recordings under the door. Place your code number on the recording form and place it in the box along with your other forms. Once you have done this you are to go to the next experimental phase, or come back to the screening room.

You are ready to begin this phase of the experiment if you have:

a. Placed the strain gauge on in such a manner that it is not touching any articles of clothing.

b. Read the instructions on the six forms, and placed your code number on each form.

c. Now press the telegraph key to signal that you understand everything.

If you have any questions regarding this phase of the experiment, please come back to the screening room now.

Appendix C-5

Instructions for The Physiological Phase

First Session - Public Subjects

(Note to the Experimenter) You are to have the subject sit in the black recliner. Give him a copy of these instructions. Have him follow along as you read these instructions to him very slowly. You are also to do the demonstrations when indicated.

This is the physiological phase. In order to monitor your physiological responses it will be necessary for you to wear a penile strain gauge which is located in the plastic bag on the left arm of your chair. When I leave the room you are to place the gauge on the shaft of your penis so that wires will be going away from you like this (Using the extra strain gauge, show the subject how to place it on by using one of your fingers.) Make sure that this gauge is not touching any articles of clothing, and once you have placed it on, please do not touch it with your hands. Since the gauge is very sensitive to any movements, please try to be as still as possible, especially during the time that a stimulus is being projected onto the screen (Point to the screen.)

During the first part of this experimental phase, you will see portions of a film. The film will be shown on this projector. (Point to the projector.) Once the film is showing, you are to sit back in your chair and watch the film. While watching the film you are to imagine yourself interacting with the subjects on the film. The second that you have achieved a full erection, you are to press this telegraph key with a quick tap. (Show the subject where the telegraph key is located.) While I will not be in this room with you during the experiment, I will be able to communicate with you by way of this intercom system. (Point to the intercom on the wall.) Once the film projector has been turned off, you are to sit back and relax.

Shortly after the film projector has been turned off, the slide projector will come on. A slide will be projected onto the screen. Again, you are to imagine yourself interacting with the subject on the slide. The slides will be projected for two minutes. You are to watch the slides during the entire time that it is being projected. After two minutes of watching the slide, I will say to you, "Now rate the slide". You are to rate the slide on one of these forms. (Show the subject the forms.) There are six forms, one form for each of the six slides that you will see. The forms have been

Appendix C-5

(Continued)

arranged in the same order as the slides will be shown to you. Therefore, it is important that you do not take them out of the order in which they are given to you. You are to rate each slide on a different form. All of the forms are identical to each other. (<u>Now read the instructions on the forms to the subject</u>.) You will have 60 seconds, the slide will disappear, and a blank slide will appear. At this time you are to sit back and relax until the next slide appears. Remember, you are not to rate the slide until I inform you to do so.

After the last slide has been shown, and you have completed the last form, you are to take off the penile strain gauge and get dressed. Place the strain gauge here. (<u>Show subject where to place the strain gauge on the table</u>.) I will inform you when to do this. Once you are dressed, you are to open the door, and I will bring you another form to write your code number on.

Are you ready? Are there any questions? (<u>In order to determine if the subjects understand the instructions, ask him to repeat the instructions you just gave him. If no questions, the experiment should begin</u>.)

Appendix C-6

Instructions for The Physiological Phase for All Sessions Following The First One - Public Subjects

(Note to the Experimenter) You are to have the subject sit in the black recliner. You are to read the instructions to him very slowly, and to do the demonstrations when indicated.

This is the physiological phase. As before, in order to monitor your physiological responses it will be necessary for you to wear a penile strain gauge. The strain gauge is located in the plastic bag on the left arm of your chair. When I leave the room you are to place the gauge on the shaft of your penis so that the wires will be going away from you like this. (Show the subject how to place the strain gauge on by using one of your fingers.) Make sure that this gauge is not touching any articles of clothing, and once you have placed it on, please do not touch it with your hands. Since the gauge is very sensitive to any movements, please try to be as still as possible, especially during the time that a stimulus is being projected onto the screen.

Today you are going to see a series of slides projected on the screen directly in front of you. The sequence of events today will be very similar to that which occurred the last time that you were here. A slide will be projected onto the screen for two minutes. During this time you are to keep your eyes on the screen and imagine yourself interacting with the subject on the slide. Following the two minute slide exposure, I will say to you, "Now rate the slide." You are to rate each slide on one of the forms located here (Show the forms to the subject) There are two scales on each form and all of the forms are identical. (Read the instructions on the form to the subject.) You will have 60 seconds to complete each form. Remember, do not rate the slide until you hear me say "Now rate the slide." At the end of the 60 seconds the slide will disappear, and a blank slide will appear. At this time you are to sit back and relax. Try not to think about the slide that you have just seen. In a few seconds another slide will appear.

Remember, there are six forms, one for each of the six slides that you will rate. These forms have been arranged in the same order as the slides will be shown. Do not take these forms out of the order in which they were given to you, and please rate each slide on a different form.

Appendix C-6
(Continued)

After the last slide has been shown, and you have completed the last form, you are to take the penile strain gauge off and get dressed. Place the strain gauge here. (Show the subject where on the table to place the strain gauge.) I will inform you when to do this. At that time, you are to place your code number on all of the forms. Then come out of the room and I will give you the recording form to place your code number on.

Are you ready? Are there any questions? (If questions, please answer them. In order to determine if subject understands the instructions ask him to repeat them.)

Appendix C-7

Instructions for The Verbal Phase

Private Subjects

This is the verbal phase. Prior to taking a seat, please go and change the sign on the door to read DO NOT ENTER, EXPERIMENT IN PROGRESS. If you like, the door may be locked from the inside. Now take a seat in the chair at the table.

On the table in front of you are four folders, one red, and three manila. The red folder contains six photographs. The photographs are labeled A thru F. The letter of each photograph is located in the top right hand corner of the photograph.

In the other three folders are rating scales. There is a different rating scale in each of these three folders. And for each scale there are six forms, one for each photograph. These folders have been placed on the table in the order in which they should be rated, from left to right.

As mentioned, in each of the three folders are six forms. In any given folder, the six forms are identical. Specifically, in each folder there is a form for each of the six photographs that you will rate. As you complete each form, please write in the space at the top of each form the letter which is located at the top right-hand corner of the photograph and also the order in which you rated it. For example, if you rated photograph B third, then at the top of the form in which you rated photograph B, you would write in B-3.

After you have completed all of the forms in a folder, you are to place them in the sealed box located at the end of the table. After you have completed all of the forms in the first folder you are to shuffle the photographs so that they will appear in a different order. Now read the instructions on the next scale and begin rating the photograph according to this scale. Be sure to place the letter of the photograph and the order in which you rated it at the top of the form.

Once you have completed the forms in all three folders, and have placed all of the completed forms in the sealed box, you are to open the door just a little.

Are you ready to begin? You are ready to begin if you

Appendix C-7
(Continued)

understand:

a. the order in which you are to complete each rating scale.

b. that you are to place at the top of each rating form your code number, the letter of the photograph and the order in which the photograph was rated.

c. that you are to shuffle the photographs between each rating scale.

d. that immediately after completing each rating scale you are to place all forms for that scale in the sealed box at the end of the table.

Do you have any questions? If so, please come back to the screening room.

Appendix C-8

Instructions for The Verbal Phase

Public Subjects

(Note to the Experimenter) You are to have the subject sit in the chair at the table. You are to read the instructions to the subject very slowly, and to do the demonstrations when indicated.

This is the verbal phase. On the table directly in front of you are four folders, one red, and three manila. The red folder contains six photographs. The photographs are labeled A thru F. The letter of each photograph is located in the top right-hand corner of the photograph. (Show the subject the letter for each photograph.) In the other three folders there are rating scales. There is a different scale in each of these folders. And for each scale there are six forms. One for each photograph. That means that in each of the folders there are six identical forms. These folders have been placed on the table in the order in which they should be rated, from left to right. That is, today you should rate the photographs according to all of the forms in folder___ first, then___, and then___.

As mentioned, in each folder there is a form for each of the six photographs that you will rate. As you rate each photograph, please write at the top of the form, the letter which is located at the top right-hand corner of the photograph. (Show this letter to the subject and show him where to write it in on the form.) You are also to write in this space the order in which you rated a particular photograph. For example, if you rated photograph B third, then at the top of the form in which you rated photograph B, you should write B-3.

After you have completed all of the forms in a folder, you are to place them back in that folder. After all of the forms in a particular folder have been completed, you are to shuffle the photographs so that they will appear in a different order for the next scale.

Once you have completed all three series of forms, you are to bring them out of the room and give them to me. Please make sure that your code number is on all of the forms.

Are you ready to begin? (In order to determine if subject understands the instructions, ask him to repeat them for you.)

Appendix C-9

Instructions for The Motoric Phase

Private Subjects

This is the motoric phase. Prior to taking a seat, please go to the door and change the sign to read, DO NOT ENTER, EXPERIMENT IN PROGRESS. If you like, the door may be locked from the inside. Now take a seat in the chair at the table.

On the table directly in front of you is a white box with two buttons on it. These buttons are labeled A and B. By pressing either one of these buttons a certain number of times, an erotic slide will appear on the screen directly in front of you. While it will be necessary for you to press the button in order to get access to an erotic slide associated with button A, and those associated with button B, the number of times or the rate at which you press a button is strictly up to you. There is a total of 18 slides. However, you will be able to see only 9 of these. The 9 slides that you see, of course, is up to you.

You may press both buttons as frequently as you like, but you can press only one button at a time. Specifically, you cannot press both buttons simultaneously. In order to avoid this happening in this experimental phase, you should use your dominant hand only (the one you use for holding a pencil when writing.) You might sit on, or place your other hand in your pocket.

When a slide appears on the screen, you are to stop pressing the buttons, and look at that slide until it disappears. When the slide disappears, you may start pressing again. The disappearance of the slide does not mean that you have to press again, it is merely an indication that you may begin to press again if you like.

This session will be over when a form is pushed under the door. At this time you are to stop pressing the buttons, and to place your code number on the form and place it in the sealed box located on the table. You may then leave the room and go to the next experimental phase or back to the screening room.

Do you understand? If you have any questions regarding this phase, please come back to the screening room. It is very important that you understand the instructions prior to beginning because once you start, you will be unable to stop and ask questions. DO NOT FORGET TO TURN THE LIGHTS OFF PRIOR TO BEGINNING.

Appendix C-10

Instructions for The Motoric Phase Public Subjects

(Note to the Experimenter) You are to have the subject sit in the chair at the table. You are to read the instructions below to the subject very slowly, and to do the demonstrations when indicated.

On the table directly in front of you is a white box with two buttons on it. (Show the subject the box.) The buttons are labeled A and B. By pressing either one of the buttons a certain number of times, an erotic slide will appear on the screen directly in front of you. While it will be necessary to press the buttons in order to get access to the erotic slides associated with button A and those associated with button B, the number of times or the rate at which you press a button is strictly up to you. There is a total of 18 slides. However, you will be able to see only 9 of these. The 9 that you see, of course, is up to you.

You may press both buttons as frequently as you like, but you can press only one button at a time. Specifically, you cannot press both buttons simultaneously. In order to avoid this happening in this experimental phase, you should use only your dominant hand. (The one that you use for holding a pencil when writing.) You might sit on, or place you other hand in your pocket.

When a slide appears on the screen you are to stop pressing the buttons and look at that slide during its' complete exposure. When the slide disappears, you may start pressing again. The disappearance of the slide does not mean that you have to press again, it is merely an indication that you may begin to press again if you like.

This session will be over when I knock on the door. At that time, you are to stop this task and come out of the room.

Do you understand? If you have any questions please ask them now because during the session I will not be able to answer any questions. (Make sure that the subject understands the instructions by having him repeat what you just said to him.)

APPENDIX D

STATISTICAL ANALYSES

Appendix D-1

The Results of the Multivariate Analysis of Variance

Source of Variance

A = Group (public vs. private)

$L = .80$
$F\ (7,12) = .44$

B = Stimulus (female vs. male)

$L = .08$
$F\ (7,12) = 20.26^{*}$

AxB = Group (public vs. private) by Stimulus (female vs. male)

$L = .72$
$F\ (7,12) = .67$

C = Time (assessment sessions 1, 2, 3, 4)

$L = .51$
$F\ (21,138) = 1.73^{**}$

AXC = Group (public vs. private) by Time (sessions 1,2,3,4)

$L = .65$
$F\ (21,138) = 1,09$

BxC = Stimulus (female vs. male) by Time (session 1,2,3,4)

$L = .64$
$F\ (21,138) = 1.10$

AxBxC = Group (public vs. private) by Stimulus (female vs. male) by Time (sessions 1, 2, 3, 4)

$L = .65$
$F\ (21,138) = 1.07$

$^{*}p < .0001$

$^{**}p < .03$

Appendix D-2

The Results of the Univariate Analysis of Variance Performed on each Dependent Measure

1. Amount of Arousal

Source of Variance[1]	df	SS	Ms	F
A	1	425	425	.48
S(A)	18	15913	884	
B	1	39302	39302	83.62*
AxB	1	1661	1616	3.53***
BxS(A)	18	8463	470	
C	3	1001	334	1.78
AxC	3	532	177	.94
CxS(A)	54	10165	188	
BxC	3	1679	560	3.35**
AxBxC	3	815	272	1.63
BxCxS(A)	54	9033	167	

2. Latency to Arousal

Source of Variance	df	SS	Ms	F
A	1	11	11	1.98
S(A)	18	100	5.55	
B	1	211	211	66.56*
AxB	1	14	14	4.42**
BxS(A)	18	57	3.17	
C	3	.94	.31	.12
AxC	3	7.43	2.48	.97
CxS(A)	54	122	2.56	
BxC	3	3.04	1.01	.67
AxBxC	3	4.87	1.67	1.08
BxCxS(A)	54	81.04	1.50	

3. Subjective Units of Arousal

Source of Variance	df	SS	Ms	F
A	1	1.22	1.22	.18
S(A)	18	120	6.67	
B	1	290	290	106.61*
AxB	1	9	9	3.31
BxS(A)	18	49	2.72	
C	3	1.30	.43	.80
AxC	3	1.74	.58	1.07

Appendix D-2

(Continued)

Source of Variance	df	SS	MS	F
CxS(A)	54	29	.54	
BxC	3	1.12	.37	.71
AxBxC	3	3.35	1.12	2.15
BxCxS(A)	54	28	.52	

4. Predicted Amount of Arousal

Source of Variance	df	SS	MS	F
A	1	1.15	1.25	.20
S(A)	18	110	6.11	
B	1	362	362	107*
AxB	1	6	6	1.77
BxS(A)	18	61	3.39	
C	3	3	1	2.17
AxC	3	1	.33	.67
CxS(A)	54	25	.46	
BxC	3	2	.66	2.15
AxBxC	3	.67	.22	.72
BxCxS(A)	54	17	.31	

5. Predicted Time to Arousal

Source of Variance	df	SS	MS	F
A	1	.91	.91	.14
S(A)	18	117	6.50	
B	1	252	252	49.32*
AxB	1	4	4	.78
BxS(A)	18	92	5.11	
C	3	3	1	1.79
AxC	3	3	1	1.79
CxS(A)	54	30	.56	
BxC	3	2	.66	1.12
AxBxC	3	2	.66	1.12
BxCxS(A)	54	32	,59	

6. Predicted Time of Viewing

Source of Variance	df	SS	MS	F
A	1	0	0	0
S(A)	18	53	2.94	
B	1	81	81	38.39*
AxB	1	5.10	5.10	2.42
BxS(A)	18	38	2.11	
C	3	2.28	.76	3.80***

Appendix D-2

(Continued)

Source of Variance	df	SS	MS	F
AxC	3	.57	.19	.95
CxS(A)	54	11	,20	
BxC	3	.58	.19	.73
AxBxC	3	.50	.17	.65
BxCxS(A)	54	14	.26	
		7. Attraction Level		
A	1	.27	.27	.12
S(A)	18	40	2.22	
B	1	277	277	
AxB	1	3	3	1.10
BxS(A)	18	49	2.72	
C	3	1.66	.55	1.49
AxC	3	.36	.12	.32
CxS(A)	54	20	.37	
BxC	3	1.41	.47	1.15
AxBxC	3	3.13	1.04	2.54
BxCxS(A)	54	22	.41	

*$p < .01$
**$p < .05$
***$p < .10$

[1]A = Group (public vs. private
S(A) = Subject(Group)
B = Stimulus (female vs. male)
AxB = Group by Stimulus
BxS(A) = Stimulus by Subjects(Group)
C = Time (assessment sessions 1,2,3,4)
AxC = Group by Time
CxS(A) = Time by Subjects(Group)
BxC = Stimulus by Time
AxBxC = Group by Stimulus by Time
BxCxS(A) = Stimulus by Time by Subjects(Group)

Appendix D-3

The Means for all Significant Effects

Source of Variance	N	Amt[1]	Lat[2]	Sua[2]	Paa[2]	Pta[2]	Ptv[2]	Alt[2]
F	80	42.92	5.12	4.18	4.42	3.96	2.94	5.39
M	80	11.43	2.93	1.58	1.47	1.18	1.57	2.71
A - F	40	42.65	4.91	4.76	4.33	3.64	2.76	5.43
A - M	40	7.18	2.40	1.37	1.39	1.10	1.59	2.78
B - F	40	41.00	5.28	4.10	4.53	4.28	3.12	5.35
B - M	40	15.70	3.48	1.79	1.55	1.26	1.55	2.64
S1	40	26.07	4.38	2.98	3.19	2.69	2.44	4.19
S2	40	30.95	4.15	3.01	3.00	2.68	2.28	4.02
S3	40	26.50	4.00	2.83	2.90	2.62	2.23	3.94
S4	40	23.37	3.60	2.65	2.69	2.30	2.08	4.05
A-F S1	20	44.90	5.75	4.20	4.85	4.18	3.16	5.51
A-F S2	20	50.25	5.45	4.50	4.59	4.15	3.17	5.51
A-F S3	20	39.15	5.00	4.15	4.37	4.03	2.91	5.21
A-F S4	20	35.80	4.30	3.85	3.99	3.48	2.58	5.33
A-M S1	20	9.25	3.00	1.75	1.53	1.20	1.55	2.88
A-M S2	20	11.65	2.85	1.70	1.43	1.22	1.43	2.52
A-M S3	20	13.90	3.00	1.50	1.41	1.21	1.53	2.67
A-M S4	20	10.95	2.90	1.45	1.40	1.12	1.58	2.83

F=Female Stimulus; M= Male Stimulus; A=Public subjects; B=Private subjects; S1...S4= Sessions 1 thru 4; Amt=amount of arousal; Lat=latency to arousal; Sua=subjective units of arousal; Paa=predicted amount of arousal; Pta=predicted time to arousal; Ptv= predicted time of viewing; Alt=attraction level

[1] Mean percentage of arousal

[2] Mean score based on a 1-7 point scale

Appendix D-4

<u>The Newman-keuls Performed on the Group by Stimulus Interaction for Latency to Arousal</u>[1]

	A 211	B 196	C 139	D 96
A. 211	-	-	72*	115*
B. 198	-	-	57*	90*
C. 139	-	-	-	43*
D. 96	-	-	-	-

*$p < .01$

N=40

[1]A - Private - Female B - Public - Female
C - Private - Male D - Public - Male

Appendix D-5

The Newman-Keuls Performed on the Group by Stimulus Interaction for Amount of Arousal[1]

	A 1706	B 1640	C 628	D 287
A. 1706	-	66	1078*	1419*
B. 1640	-	-	1012*	1353*
C. 623	-	-	-	340*
D. 287	-	-	-	-

*$p < .01$

**$p < .05$

N=40

A - Public - Female

B - Private - Female

C - Private - Male

D - Public - Male

Appendix D-6

The Newman-Keuls Performed on Time for Predicted Time of Viewing[1]

	A 97.60	B 91.20	C 89.20	D 83.20
A. 97.60	-	7	5.60	12.80*
B 91.20	-	-	2.40	9.60*
C 89.20	-	-	-	7.20
D 83.20	-	-	-	-

*$p < .01$
N=40

[1] A - First Session B - Second Session
C - Third Session D - Fourth Session

Appendix D-7

The Newman-Keuls Performed on the Time by Stimulus Effect for Amount of Arousal[1]

		A	B	C	D	E	F	G	H
A	1005	1005	898	783	716	278	233	219	189
B	898	-	107	222	289*	727*	772*	780*	820*
C	783	-	-	115	182	620*	665*	679*	713*
D	716	-	-	-	67	505*	550*	564*	598*
E	278	-	-	-	-	438*	483*	497*	531*
F	233	-	-	-	-	-	45	59	93
G	219	-	-	-	-	-	-	14	44
H	189	-	-	-	-	-	-	-	-

*$p < .01$

[1]A - Second Session Female
B - First Session-Female
C - Third Session-Female
D - Fourth Session-Female
E - Third Session-Male
F - Second Session-Male
G - Fourth Session-Male
H - First Session-Male

Appendix D-8

The Mean Scores for each Dependent Measure at each Assessment Session for Female and Male Stimuli at the Group Level of Analysis

Public Subjects - Female Stimuli

Measures	Session 1	Session 2	Session 3	Session 4
Amount of Arousal	41.60	45.50	45.20	38.30
Latency to Arousal	5.00	5.10	5.40	4.40
Subjective Units	4.33	4.46	4.60	3.67
Predicted Amount	4.83	4.17	4.50	3.80
Predicted Time to Arousal	3.70	3.73	3.90	3.23
Predicted Time of Viewing	2.97	2.73	3.00	2.37
Attraction Level	5.80	5.30	5.50	5.60

Public Subjects - Male Stimuli

Amount of Arousal	7.60	6.70	7.60	6.80
Latency to Arousal	2.60	2.10	2.30	2.60
Subjective Units	1.77	1.43	1.13	1.13
Predicted Amount	1.53	1.29	1.40	1.33
Predicted Time to Arousal	1.07	1.17	1.10	1.07
Predicted Time of Viewing	2.97	2.73	3.00	2.37
Attraction Level	2.83	2.84	2.68	2.78

Private Subjects - Female Stimuli

Amount of Arousal	45.20	55.00	33.10	33.30
Latency to Arousal	6.50	5.80	4.60	4.20
Subjective Units	4.10	4.50	3.73	4.09
Predicted Amount	4.83	5.03	4.23	4.17
Predicted Time to Arousal	4.67	4.57	4.17	3.73

Appendix D-8

(Continued)

Measures	Session 1	Session 2	Session 3	Session 4
Predicted Time of Viewing	3.30	3.60	2.83	2.89
Attraction Level	5.40	5.64	5.10	5.25
Private Subjects - Male Stimuli				
Amount of Arousal	10.90	16.60	20.20	15.10
Latency to Arousal	3.43	3.06	3.67	3.17
Subjective Units	1.70	1.99	1.93	1.80
Predicted Amount	1.53	1.57	1.63	1.48
Predicted Time to Arousal	1.33	1.27	1.31	1.17
Predicted Time of Viewing	1.50	1.43	1.60	1.28
Attraction Level	5.40	5.65	5.09	5.25
Public-Private - Female Stimuli				
Amount of Arousal	42.90	50.25	39.15	35.80
Latency to Arousal	5.75	5.45	5.00	4.30
Subjective Units	4.22	4.48	4.17	3.88
Predicted Amount	4.75	4.60	4.37	3.99
Predicted Time to Arousal	4.83	4.15	4.04	3.48
Predicted Time of Viewing	3.14	3.17	2.92	2.63
Attraction Level	5.60	5.47	5.30	5.42
Public-Private - Male Stimuli				
Amount of Arousal	5.45	11.65	13.90	10.95
Latency to Arousal	3.02	2.85	2.12	2.89
Subjective Units	1.74	1.71	1.53	1.47
Predicted Amount	1.53	2.20	2.52	1.41
Predicted Time to Arousal	1.20	1.22	1.21	1.12
Predicted Time of Viewing	2.24	2.08	2.30	1.83
Attraction Level	4.12	2.08	2.30	4.02

Appendix D-8

(Continued)

Public-Private - Male-Female Stimuli

Measures	Session 1	Session 2	Session 3	Session 4
Amount of Arousal	24.18	30.95	26.53	23.38
Latency to Arousal	4.39	4.02	3.56	3.60
Subjective Units	5.06	3.10	2.85	2.68
Predicted Amount	3.14	3.40	1.44	2.70
Predicted Time to Arousal	3.02	2.69	2.63	2.30
Predicted Time of Arousal	2.69	2.63	2.61	2.23
Attraction Level	4.86	4.86	4.60	4.72

Appendix D-9

The Mean Correlations for Public Subjects - Female Slides

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.45	.50	.73	.70
Amount/Subjective Units	.05	.10	.50	-.18
Amount/Predict Amount	-.60	.01	.48	-.08
Amount/Predict Time	.81	.02	.19	-.31
Amount/Predict Viewing	.82	.11	.45	.68
Amount/Attraction	.66	.43	.06	.89*
Latency/Subjective Units	.30	.54	.84*	.17
Latency/Predict Amount	.48	.65	.45	.02
Latency/Predict Time	.43	.80*	.44	.21
Latency/Predict Viewing	.37	.60	.46	.51
Latency/Attraction	.10	.33	.32	.17
Subjective Units/Predict Amount	.57	.85*	.65	.49
Subjective Units/Predict Time	.84*	.71	.52	.92*
Subjective Units/Predict Viewing	.58	.64	.68	.43
Subjective Units/Attraction	.54	.74*	.55	.74*
Predict Amount/Predict Time	.53	.73*	.79*	.55
Predict Amount/Predict Viewing	.61	.66	.79*	.48
Predict Amount/Attraction	.74*	.80*	.61	.70
Predict Time/Predict Viewing	.68	.68	.63	.35
Predict Time/Attraction	.53	.49	.27	.70
Predict Viewing/Attraction	.52	.51	.39	.39

*$p < .02$

Appendix D-10

The Mean Correlations for Private Subjects - Female Slides

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.48	-.68	.37	.66
Amount/Subjective Units	.51	.18	.06	.02
Amount/Predict Amount	.43	-.34	.05	.05
Amount/Predict Time	.30	-.68	.19	-.09
Amount/Predict Viewing	.59	-.36	.19	.22
Amount/Attraction	.82*	-.48	.28	-.08
Latency/Subjective Units	.23	.02	.14	.01
Latency/Predict Amount	.33	-.02	.34	.22
Latency/Predict Time	.07	-.52	.31	.18
Latency/Predict Viewing	-.06	.29	.29	-.07
Latency/Attraction	.44	-.17	.22	.18
Subjective Units/Predict Amount	.66	.51	.85*	.86*
Subjective Units/Predict Time	.16	.43	.56	.45
Subjective Units/Predict Viewing	.71	.57	.71	.77*
Subjective Units/Attraction	.70	.50	.46	.88*
Predict Amount/Predict Time	.30	-.68	.19	-.09
Predict Amount/Predict Viewing	.59	.85*	.63	.81*
Predict Amount/Attraction	.66	.97*	.74*	.93*
Predict Time/Predict Viewing	.44	.36	.31	.43
Predict Time/Attraction	.32	.72*	.90*	.60
Predict Viewing/Attraction	.46	.80*	.24	.71

*$p < .02$

Appendix D-11

A Comparison of the Public and the Private Conditions at the Group Level of Analysis[1]

Variables	Female	Male
Amount/Latency	1.44	-.36
Amount/Subjective Units	.96	-.72
Amount/Predict Amount	.92	-.84
Amount/Predict Time to Arousal	.45	-1.04
Amount/Predict Time of Viewing	1.08	-.70
Amount/Attraction Level	-.45	-.87
Latency/Subjective Units	1.12	-.70
Latency/Predict Amount	.50	.27
Latency/Predict Time to Arousal	.90	.70
Latency/Predict Time of Viewing	.61	1.42
Latency/Attraction Level	-.07	.40
Subjective Units/Predict Amount	-.57	-2.65
Subjective Units/Predict Time	1.53	-1.39
Subjective Units/Predict Viewing	-.59	-.52
Subjective Units/Attraction Level	-.33	-.22
Predict Amount/Predict Time	-.44	-1.98
Predict Amount/Predict Viewing	.90	-.92
Predict Amount/Attraction Level	-.60	-.17
Predict Time/Predict Viewing	.90	-.92
Predict Time/Attraction Level	-.60	-.17
Predict Viewing/Attraction Level	-.51	-.43

[1] *t* Scores

Appendix D-12

The Mean Within-Subject Correlations and their Corresponding Fisher's Z for Public and Private Subjects, and Female and Male Slides - The First Four Assessment Sessions

	Subjects	Female	(Z)	Male	(Z)
Public	3	.60	.69	.64	.76
	4	.51	.56	.48	.52
	6	.82	1.16	.31	.32
	10	.81	1.13	.57	.65
Means		.69	.89	.50	.56
Private	11	.65	.78	.64	.76
	12	.69	.85	.50	.55
	16	.51	.56	.97	2.09
	17	.56	.63	.96	1.95
Means		.60	.71	.77	1.34

Appendix D-13

The Mean Within-Subject Correlations and their Corresponding Fisher's Z for Public and Private Subjects, and Female and Male Slides - The Additional Assessment Sessions

	Subjects	Female	(Z)	Male	(Z)
Public	3	.62	.76	.51	.56
	4	.53	.59	.61	.71
	6	.82	1.16	.45	.46
	10	.86	1.29	.91	1.53
Means		.71	.95	.62	.82
Public/ Private	11	.53	.59	.65	.78
	12	.60	.69	.75	.97
	16	.62	.73	.67	.81
	17	.81	1.13	.34	.34
Means		.64	.79	.61	.73

Appendix D-14

The Mean Correlations for Public Subjects - Male Slides

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.57	.71	.66	.80*
Amount/Subjective Units	.31	.20	.86*	.22
Amount/Predict Amount	.22	.29	.63	.23
Amount/Predict Time	.06	.79*	.26	.04
Amount/Predict Viewing	.12	.12	.05	.71
Amount/Attraction	.42	.42	.01	.41
Latency/Subjective Units	.45	.13	.75	.60
Latency/Predict Amount	.23	.79*	.55	.83*
Latency/Predict Time	.07	.32	.22	.40
Latency/Predict Viewing	.10	.62	.03	.32
Latency/Attraction	.63	.07	.00	.35
Subjective Units/Predict Time	.55	.18	.54	.67
Subjective Units/Predict Amount	.21	.12	.82*	.67
Subjective Units/Predict Viewing	.27	.49	.42	.43
Subjective Units/Attraction	.71	.46	.12	.07
Predict Amount/Predict Time	.04	.17	.90*	.38
Predict Amount/Predict Viewing	.44	.69	.51	.15
Predict Amount/Attraction	.03	.00	.06	.15
Predict Time/Predict Viewing	.02	.10	.62	.40
Predict Time/Attraction	.39	.19	.04	.41
Predict Viewing/Attraction	.43	.25	.42	.34

*$p < .02$

Appendix D-15

The Mean Correlations for Private Subjects - Male Slides

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.91*	.86*	.83*	.89*
Amount/Subjective Units	.50	.92*	.54	.86*
Amount/Predict Amount	.31	.91*	.68	.48
Amount/Predict Time	.30	.88*	.83*	.70
Amount/Predict Viewing	.35	.61	.82*	.36
Amount/Attraction	.17	.41	.48	.65
Latency/Subjective Units	.58	.73*	.58	.80*
Latency/Predict Amount	.44	.73*	.58	.59
Latency/Predict Time	.39	.81*	.67	.69
Latency/Predict Viewing	.33	.75*	.58	.42
Latency/Attraction	.38	.32	.42	.58
Subjective Units/Predict Amount	.84*	.91*	.71	.86*
Subjective Units/Predict Time	.72*	.92*	.71	.85*
Subjective Units/Predict Viewing	.58	.56	.26	.47
Subjective Units/Attraction	.15	.60	.32	.58
Predict Amount/Predict Time	.93*	.95*	.86*	.93*
Predict Amount/Predict Viewing	.77*	.60	.47	.35
Predict Amount/Attraction	.16	.47	.40	.29
Predict Time/Predict Viewing	.74*	.66	.55	.31
Predict Time/Attraction	.04	.46	.36	.39
Predict Viewing/Attraction	.06	.19	.47	.30

*$p < .02$

Appendix D-16

Division of Correlation Coefficients into Three Categories--Low, Medium and High

Public Condition	Low	Medium	High
Female Slides			
Session One	33	48	19
Session Two	33	38	29
Session Three	48	33	19
Session Four	57	14	29
Male Slides			
Session One	81	14	05
Session Two	63	23	14
Session Three	52	29	23
Session Four	71	14	14
Private Condition			
Female Slides			
Session One	55	32	14
Session Two	45	36	18
Session Three	64	09	27
Session Four	55	09	36
Male Slies			
Session One	55	13	32
Session Two	23	23	55
Session Three	32	36	32
Session Four	41	27	32

Appendix D-17

The Difference Between the Highest and the Lowest Correlation Coefficient across the Four Asssessment Sessions for both Female and Male Slides and for the Public Private and Combined Groups

Female Slides

Relationships	Public	Private	Combined
Amount/Latency	28	31	26
Amount/Subjective Units	45	49	57
Amount/Predict Amount	59	38	33
Amount/Predict Time	79*	59	41
Amount/Predict Viewing	71	40	30
Amount/Attraction	83*	74*	34
Latency/Subjective Units	54	21	48
Latency/Predict Amount	63	32	24
Latency/Predict Time	59	45	24
Latency/Predict Viewing	23	27	7
Latency/Attraction	23	23	26
Subjective Units/Predict Amount	36	35	10
Subjective Units/Predict Time	30	40	27
Subjective Units/Predict Viewing	26	20	10
Subjective Units/Attraction	20	42	33
Predict Amount/Predict Time	26	59	11
Predict Amount/Predict Viewing	31	22	11
Predict Amount/Attraction	19	31	24
Predict Time/Predict Viewing	33	13	15
Predict Time/Attraction	48	40	27
Predict Viewing/Attraction	13	56	14
Overall Mean Difference	70	61	50

Male Slides

Amount/Latency	23	8	14

Appendix D-17

(Continued)

Relationships	Public	Private	Combined
Amount/Subjective Units	66	42	77*
Amount/ Predict Amount	41	60	62
Amount/Predict Time	75*	58	50
Amount/Predict Viewing	66	47	49
Amount/Attraction	41	48	56
Latency/Subjective Units	62	22	66
Latency/Predict Amount	60	29	39
Latency/Predict Time	33	42	24
Latency/Predict Viewing	59	42	42
Latency/Attraction	63	26	51
Subjective Units/Predict Amount	70	10	69
Subjective Units/Predict Time	49	21	44
Subjective Units/Predict Viewing	22	32	21
Subjective Units/Attraction	64	45	8
Predict Amount/Predict Time	86*	9	21
Predict Amount/Predict Viewing	54	42	27
Predict Amount/Attraction	15	31	25
Predict Time/Predict Viewing	60	43	21
Predict Time/Attraction	37	42	31
Predict Viewing/Attraction	18	41	31
Overall Mean Difference	68	52	63

N = 10 (Public)
10 (Private)
20 (Combined)

*$p < .05$

Appendix D-18

The Mean Correlations for Data Collapsed Across Public and Private Subjects - Female Slides

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.60*	.53*	.70*	.79*
Amount/Subjective Units	.48	.29	.57*	.00
Amount/Predict Amount	.50	.29	.35	.17
Amount/Predict Time	.41	.07	.33	.00
Amount/Predict Viewing	.61*	.38	.40	.31
Amount/Attraction	.44	.19	.10	.10
Latency/Subjective Units	.21	.27	.49	-.01
Latency/Predict Amount	.37	.34	.18	.13
Latency/Predict Time	.25	.12	.17	.01
Latency/Predict Viewing	.19	.45	.43	.34
Latency/Attraction	.20	.14	.20	.13
Subjective Units/Predict Amount	.61*	.71*	.68*	.69*
Subjective Units/Predict Time	.44	.58*	.62*	.71*
Subjective Units/Predict Viewing	.62*	.60*	.70*	.59*
Subjective Units/Attraction	.61*	.63*	.49	.82*
Predict Amount/Predict Time	.56*	.67*	.62*	.64*
Predict Amount/Predict Viewing	.61*	.69*	.72*	.63*
Predict Amount/Attraction	.70*	.86*	.62*	.81*
Predict Time/Predict Viewing	.48	.55*	.52	.40
Predict Viewing/Attraction	.39	.55*	.42	.66*
Predict Viewing/Attraction	.48	.56*	.42	.54*

*$p < .01$

Appendix D-19

The Mean Correlations for Data Collapsed Across Public and Private Subjects - Male Slides

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.91*	.86*	.85*	.77*
Amount/Subjective Units	.04	.81*	.60*	.68*
Amount/Predict Amount	.24	.86*	.73*	.51
Amount/Predict Time	.29	.79*	.79*	.61*
Amount/Predict Viewing	.20	.48	.69*	.55*
Amount/Attraction	-.05	.22	.44	.61*
Latency/Subjective Units	.02	.63*	.60*	.68*
Latency/Predict Amount	.34	.73*	.61*	.53
Latency/Predict Time	.37	.61*	.60*	.60*
Latency/Predict Viewing	.21	.63*	.49	.42
Latency/Attraction	.00	.17	.36	.51
Subjective Units/Predict Amount	.25	.88*	.94*	.85*
Subjective Units/Predict Time	.39	.68*	.71*	.83*
Subjective Units/Predict Viewing	.34	.47	.34	.55*
Subjective Units/Attraction	.49	.48	.33	.51
Predict Amount/Predict Time	.85*	.67*	.87*	.88*
Predict Amount/Predict Viewing	.65*	.44	.51	.38
Predict Amount/Attraction	.14	.26	.39	.31
Predict Time/Predict Viewing	.56	.35	.55	.40
Predict Time/Attraction	.13	.12	.32	.43
Predict Viewing/Attractiom	.27	.20	.51	.39

*$p < .01$

Appendix D-20

The Mean Correlations for Data Collapsed Across Female and Male Slides - Public Subjects

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.24	.59	.77	.63
Amount/Subjective Units	.20	.31	.11	.13
Amount/Predict Amount	.32	.21	.62	.41
Amount/Predict Time	.53	.19	.86*	.37
Amount/Predict Viewing	.70	-.01	.58	.21
Amount/Attraction	.18	.41	.36	.30
Latency/Subjective Units	-.21	.17	.35	.14
Latency/Predict Amount	.00	.33	.38	.11
Latency/Predict Time	.00	-.08	.00	.00
Latency/Predict Viewing	-.11	.20	.00	-.21
Latency/Attraction	-.08	.35	.00	.43
Subjective Units/Predict Amount	.43	.57	.20	.80
Subjective Units/Predict Time	.80	.33	.00	.80
Subjective Units/Predict Viewing	.47	.75	.13	.14
Subjective Units/Attraction	.60	.86	-.09	.50
Predict Amount/Predict Time	.57	.57	.43	.77
Predict Amount/Predict Viewing	.22	.33	.50	.30
Predict Amount/Attraction	.34	.60	.20	.60
Predict Time/Predict Viewing	.47	.00	.00	.20
Predict Time/Attraction	.48	.29	.13	.60
Predict Viewing/Attraction	.38	.37	.28	.38

Appendix D-21

The Mean Correlations for Data Collapsed Across
Female and Male Slides - Private Subjects

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.71	.42	.70	.81
Amount/Subjective Units	.32	.39	.17	.81
Amount/Predict Amount	.65	.54	.50	.50
Amount/Predict Time	.67	-.06	.40	.55
Amount/Predict Viewing	.60	.00	.33	.43
Amount/Attraction	.27	.15	.42	.44
Latency/Subjective Units	-.08	.56	.45	.58
Latency/Predict Amount	.67	.53	.78	.56
Latency/Predict Time	.54	.30	.42	.21
Latency/Predict Viewing	.71	.58	.43	.64
Latency/Attraction	.71	.43	.88	.55
Subjective Units/Predict Amount	.22	.87	.89	.88
Subjective Units/Predict Time	.00	.13	.58	.19
Subjective Units/Predict Viewing	.57	.45	.43	.50
Subjective Units/Attraction	-.29	.71	.25	.45
Predict Amount/Predict Time	.80	.33	.45	.36
Predict Amount/Predict Viewing	.43	.36	.67	.58
Predict Amount/Attraction	.57	.83	.43	.45
Predict Time/Predict Viewing	.71	.57	.25	.30
Predict Time/Attraction	.57	.33	.11	.11
Predict Viewing/Attraction	.40	.40	.20	.57

Appendix D-22

The Mean Correlations for Data Collapsed Across all Factors

Relationships	Session 1	Session 2	Session 3	Session 4
Amount/Latency	.81	.18	.61	.80
Amount/Subjective Units	.33	-.10	.06	.15
Amount/Predict Amount	.57	.00	.04	.24
Amount/Predict Time	.21	.09	.62	.10
Amount/Predict Viewing	.42	.12	.19	.42
Amount/Attraction	.18	.44	.38	.59
Latency/Subjective Units	.40	.36	.44	.00
Latency/Predict Amount	.25	.17	.43	.40
Latency/Predict Time	.11	.29	.40	.00
Latency/Predict Viewing	.29	.67	.13	.44
Latency/Attraction	.11	.17	.57	.14
Subjective Units/Predict Amount	.00	.17	.20	.46
Subjective Units/Predict Time	.50	.67	.14	.10
Subjective Units/Predict Viewing	.60	.40	.20	.36
Subjective Units/Attraction	-.33	-.60	.20	.00
Predict Amount/Predict Time	.40	-.37	.00	.67
Predict Amount/Predict Viewing	.33	.00	.25	.33
Predict Amount/Attraction	.60	.00	.25	.33
Predict Time/Predict Viewing	.00	.67	.17	.40
Predict Time/Attraction	.50	.00	.17	.60
Predict Viewing/Attraction	.00	.00	.25	.40

Appendix D-23

The Multicontent-Multimethod-Multibehavior Model for Data Collapsed Across all Factors including Time

Relationships	rho	Range[1]
Amount/Latency	.73*	.18 - .81
Amount/Subjective Units	.44	-.10 - .33
Amount/Predict Amount	.42	.00 - .57
Amount/Predict Time	.45	.09 - .62
Amount/Predict Viewing	.45	.12 - .42
Amount/Attraction	.34	.18 - .59
Latency/Subjective Units	.43	.00 - .44
Latency/Predict Amount	.36	.17 - .44
Latency/Predict Time	.42	.00 - .11
Latency/Predict Viewing	.46	.13 - .67
Latency/Attraction	.30	.11 - .57
Subjective Units/Predict Amount	.59*	.00 - .42
Subjective Units/Predict Time	.62*	.10 - .67
Subjective Units/Predict Viewing	.52	-.20 - .60
Subjective Units/Attraction	.50	-.60 - .20
Predict Amount/ Predict Time	.66*	.00 - .67
Predict Amount/ Predict Viewing	.46	.00 - .33
Predict Amount/ Attraction	.49	.00 - .60
Predict Time/ Predict Viewing	.46	.00 - .67
Predict Time/ Attraction	.45	.00 - .60
Predict Viewing/ Attraction	.39	.00 - .40
Mean	.47	

N = 40

*$p < .01$

[1]range; See Appendix D-22

APPENDIX E

FIGURES AND MATRICES

Appendix E-1

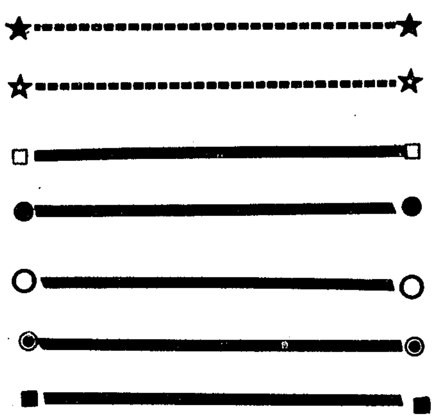
Multicontent-Multimethod-Multibehavior Model[1]

Verbal		Direct Observation	
B_1 Subjective Units Arousal	B_2 Predicted Amount Arousal		
B_1 Predicted Amount Arousal	B_2 Predicted Time Arousal	B_1 Amount of Arousal	B_2 Latency to Arousal
B_1 Attraction Level	B_2 Predicted Time Viewing	B_1 Rate of Responding	B_2 Time Spent Responding

[1] B_1 = Behavior one; B_2 = Behavior two

Appendix E-2

The Legend for Each Graph



Amount of Arousal

Latency to Arousal

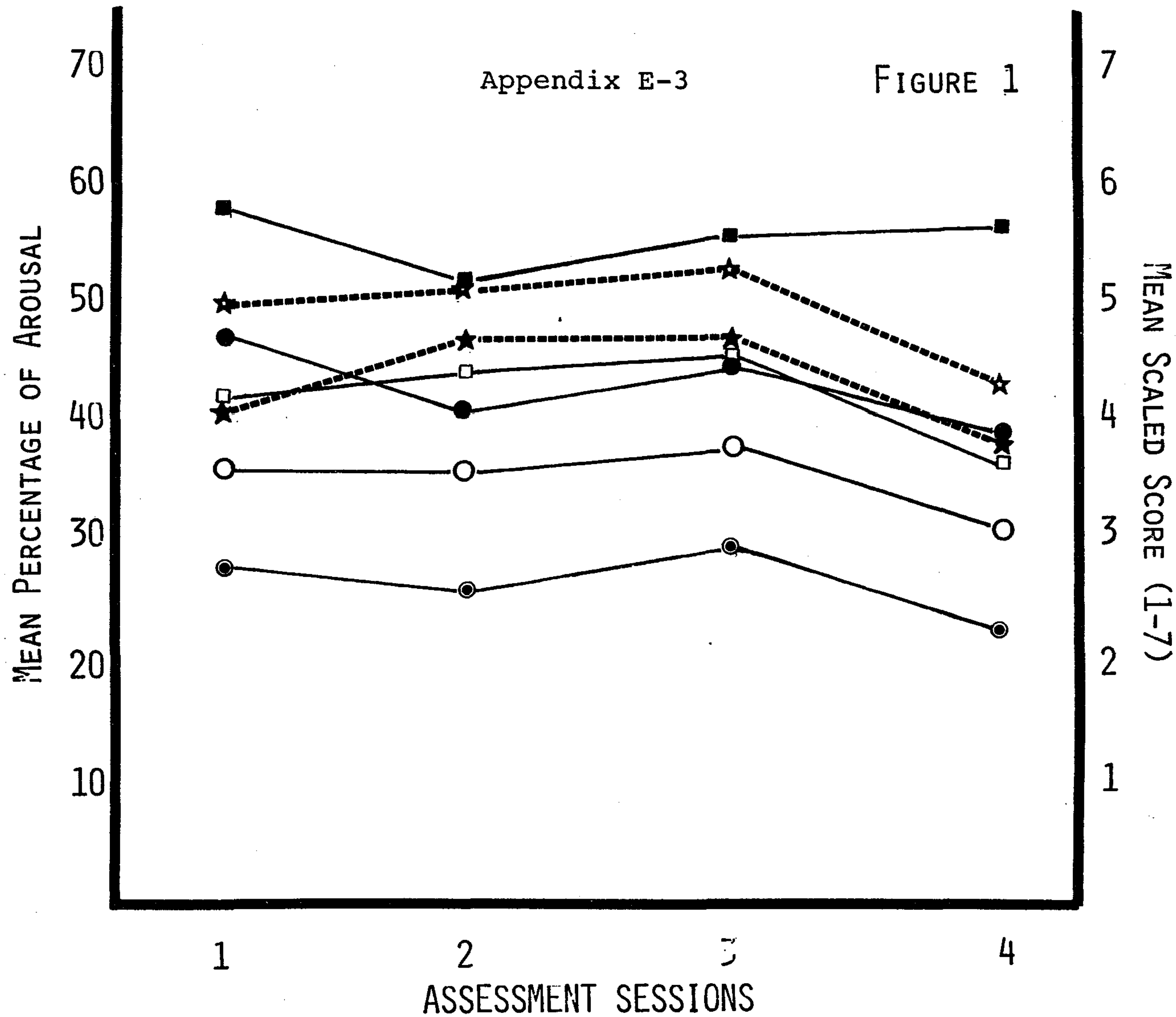
Subjective Units of Arousal

Predicted Amount of Arousal

Predicted Time to Arousal

Predicted Time of Viewing

Attraction Level



THE AVERAGE SCORE FOR EACH MEASURE AT EACH OF THE FOUR ASSESSMENT SESSIONS FOR PUBLIC SUBJECTS-FEMALE SLIDES.

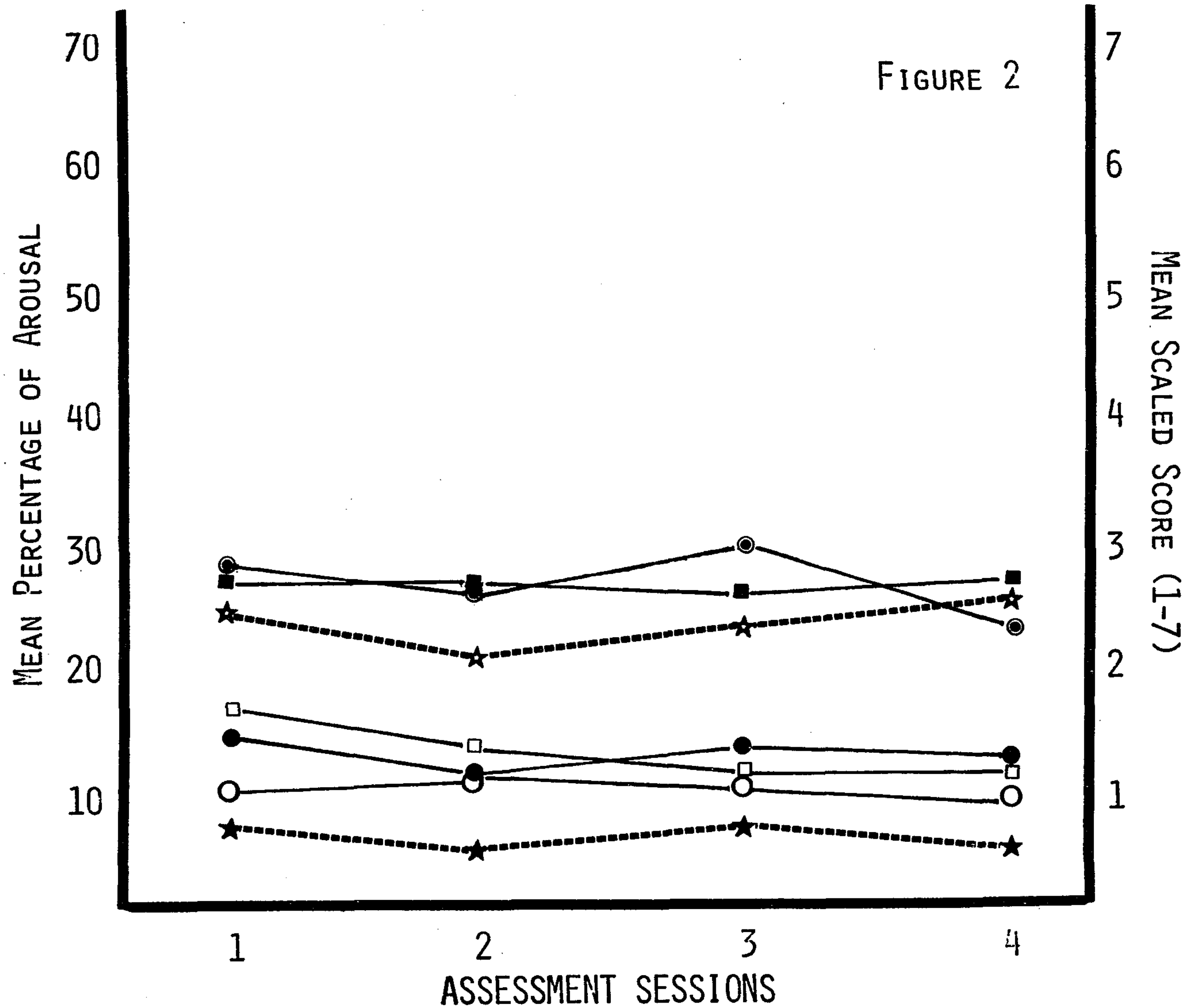
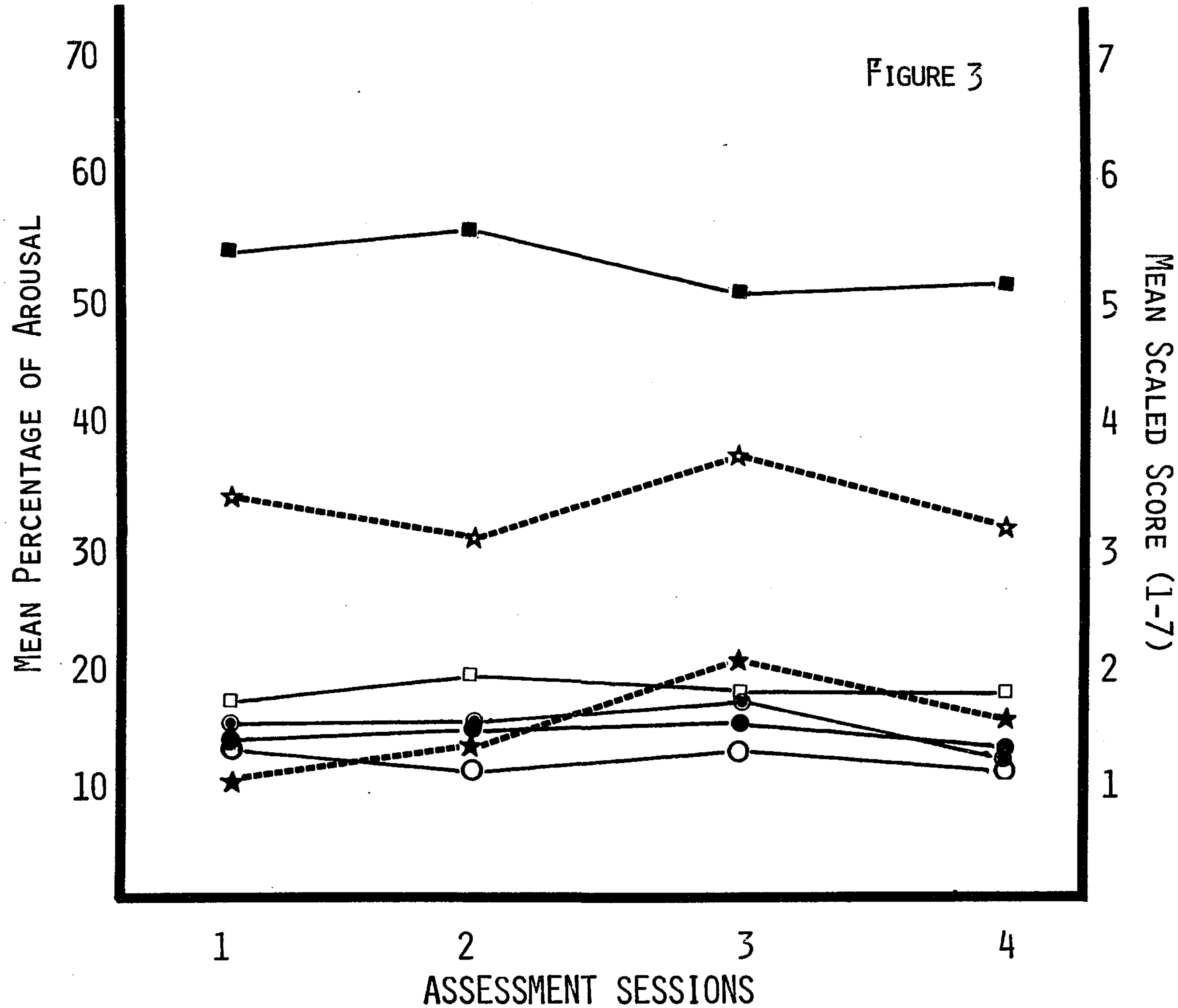
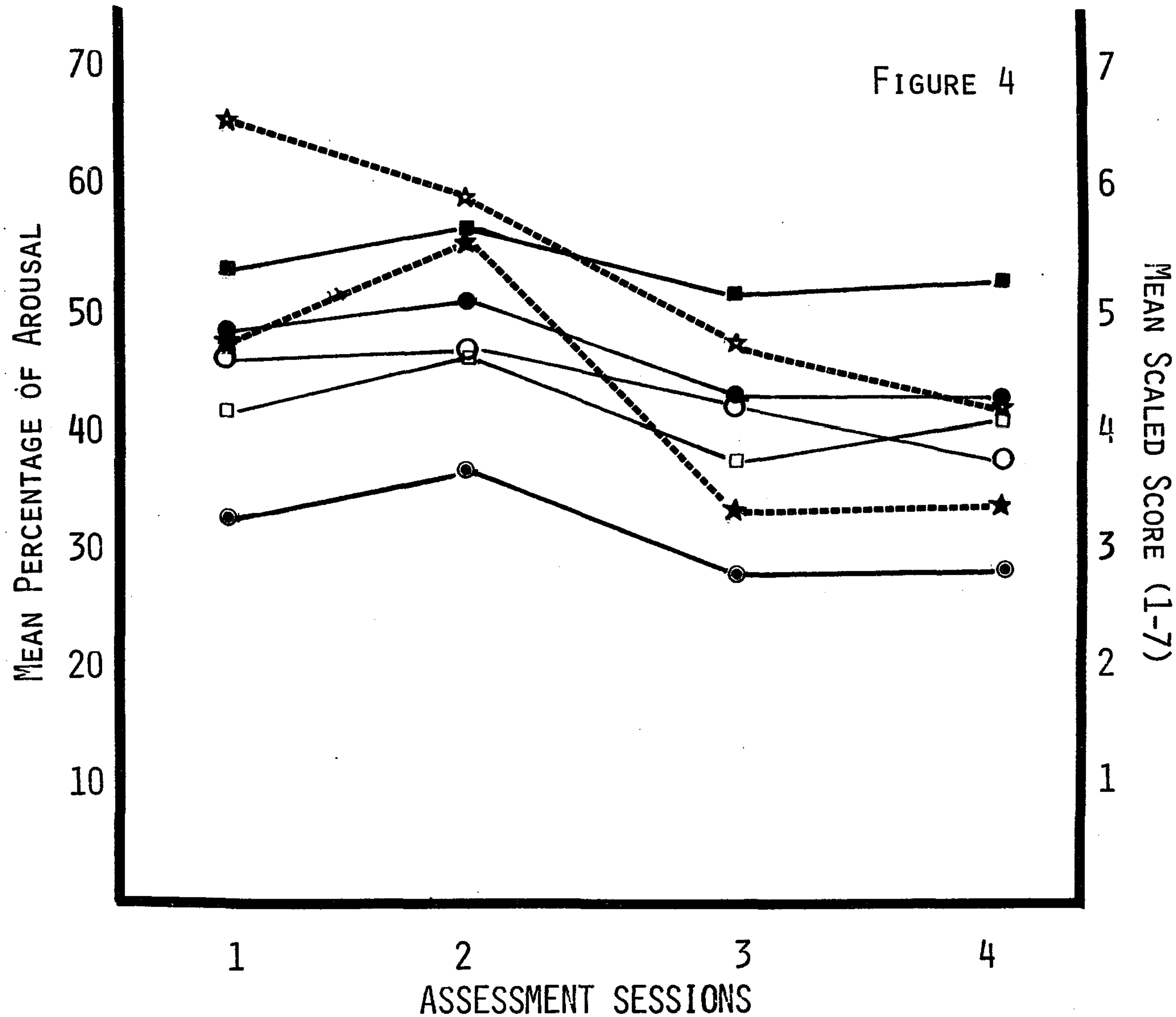


FIGURE 2

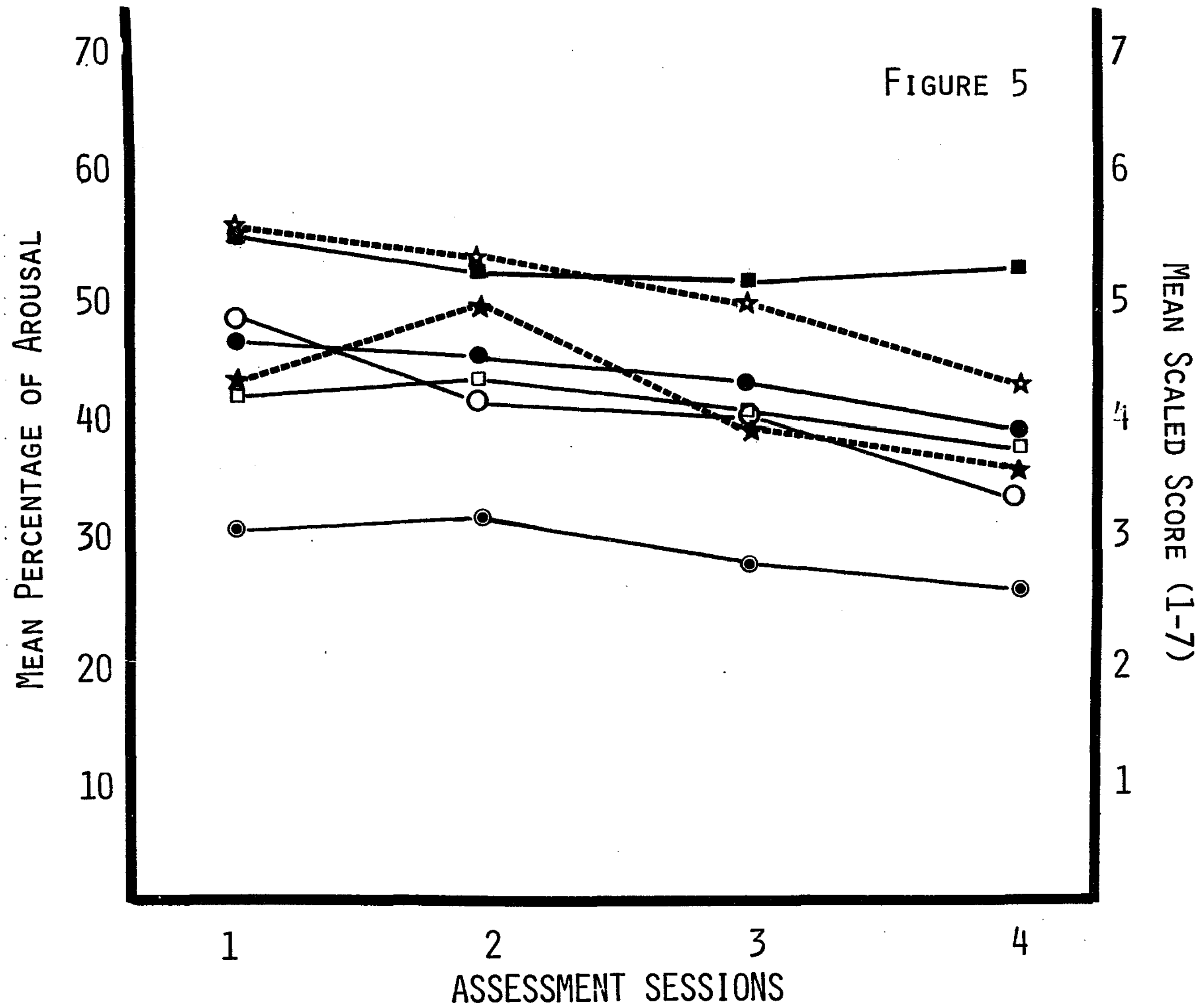
THE AVERAGE SCORE FOR EACH MEASURE AT EACH OF THE FOUR ASSESSMENT SESSIONS FOR PUBLIC SUBJECTS-MALE SLIDES



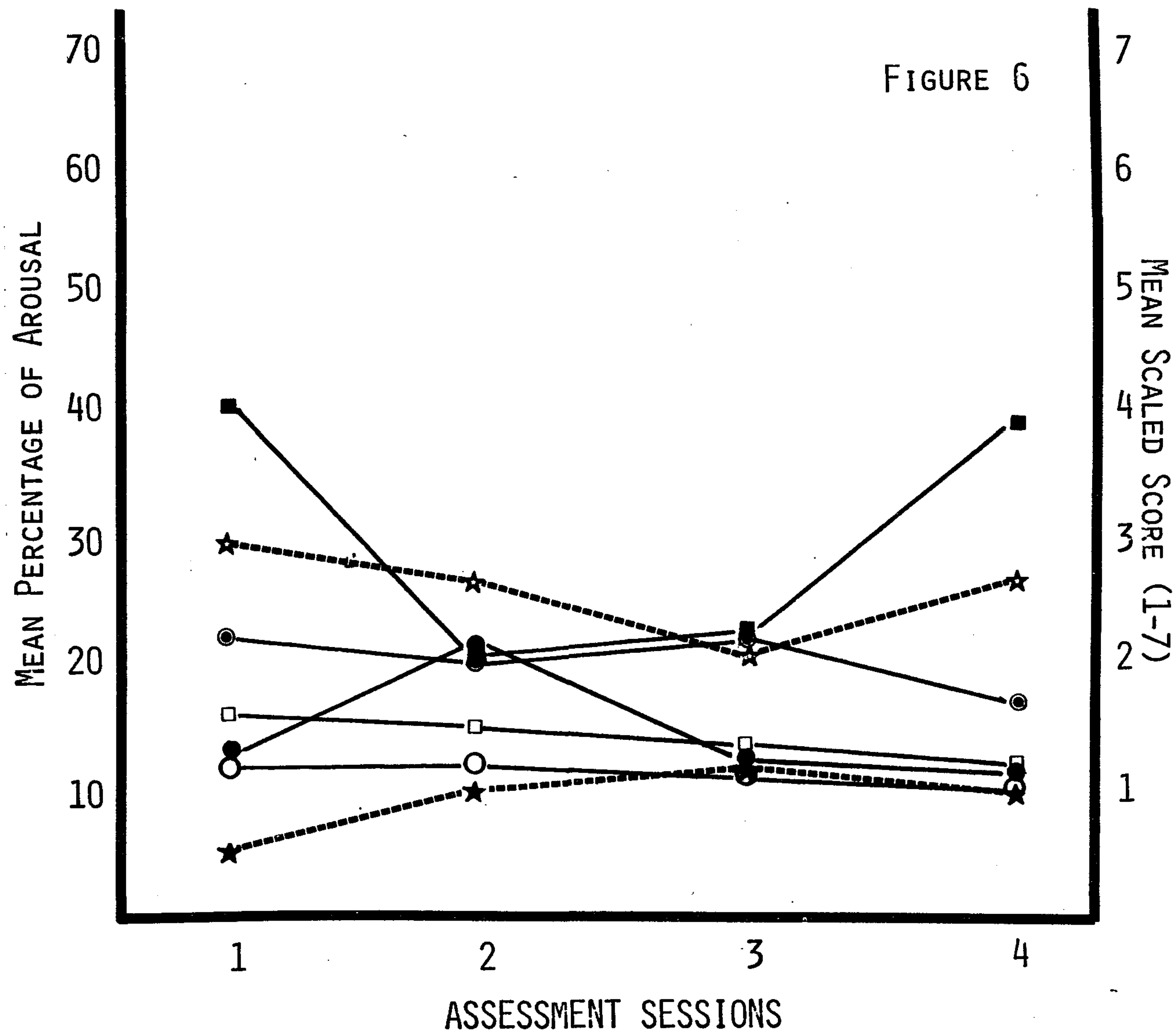
THE AVERAGE SCORE FOR EACH MEASURE AT EACH OF THE FOUR ASSESSMENT SESSIONS FOR PRIVATE SUBJECTS-FEMALE SLIDES



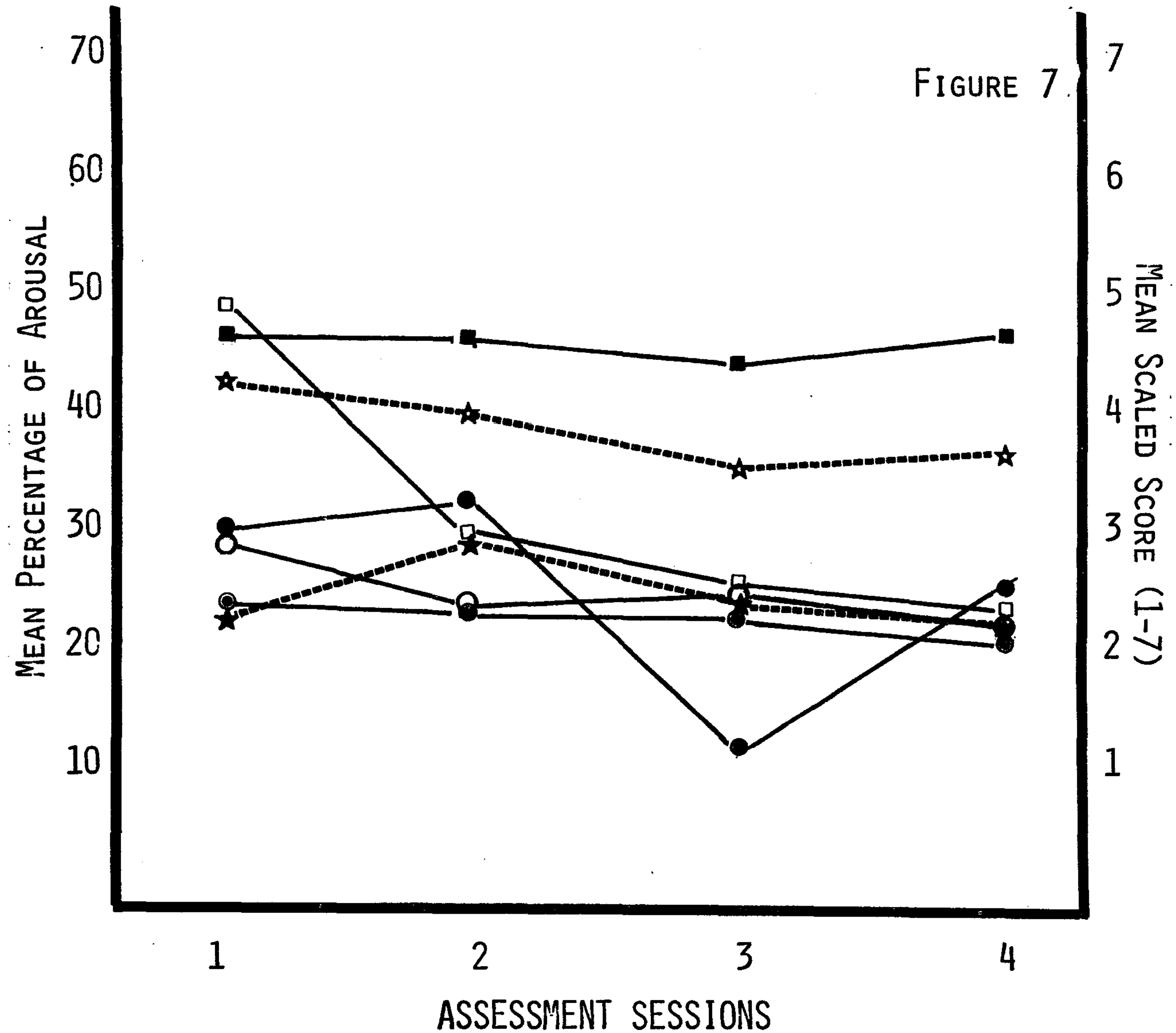
THE AVERAGE SCORE FOR EACH MEASURE AT EACH OF THE FOUR ASSESSMENT SESSIONS FOR PUBLIC SUBJECTS-MALE SLIDES



The Average Score for each Measure Collapsed across the Public and Private Conditions at each Assessment Session for Female Slides



THE AVERAGE SCORE FOR EACH MEASURE COLLAPSED ACROSS THE PUBLIC AND PRIVATE CONDITIONS AT EACH ASSESSMENT SESSION FOR MALE SLIDES



THE AVERAGE SCORE FOR EACH MEASURE COLLAPSED ACROSS THE PUBLIC AND PRIVATE SUBJECTS AND FEMALE MALE SLIDES AT EACH SESSION

248

Appendix E-4

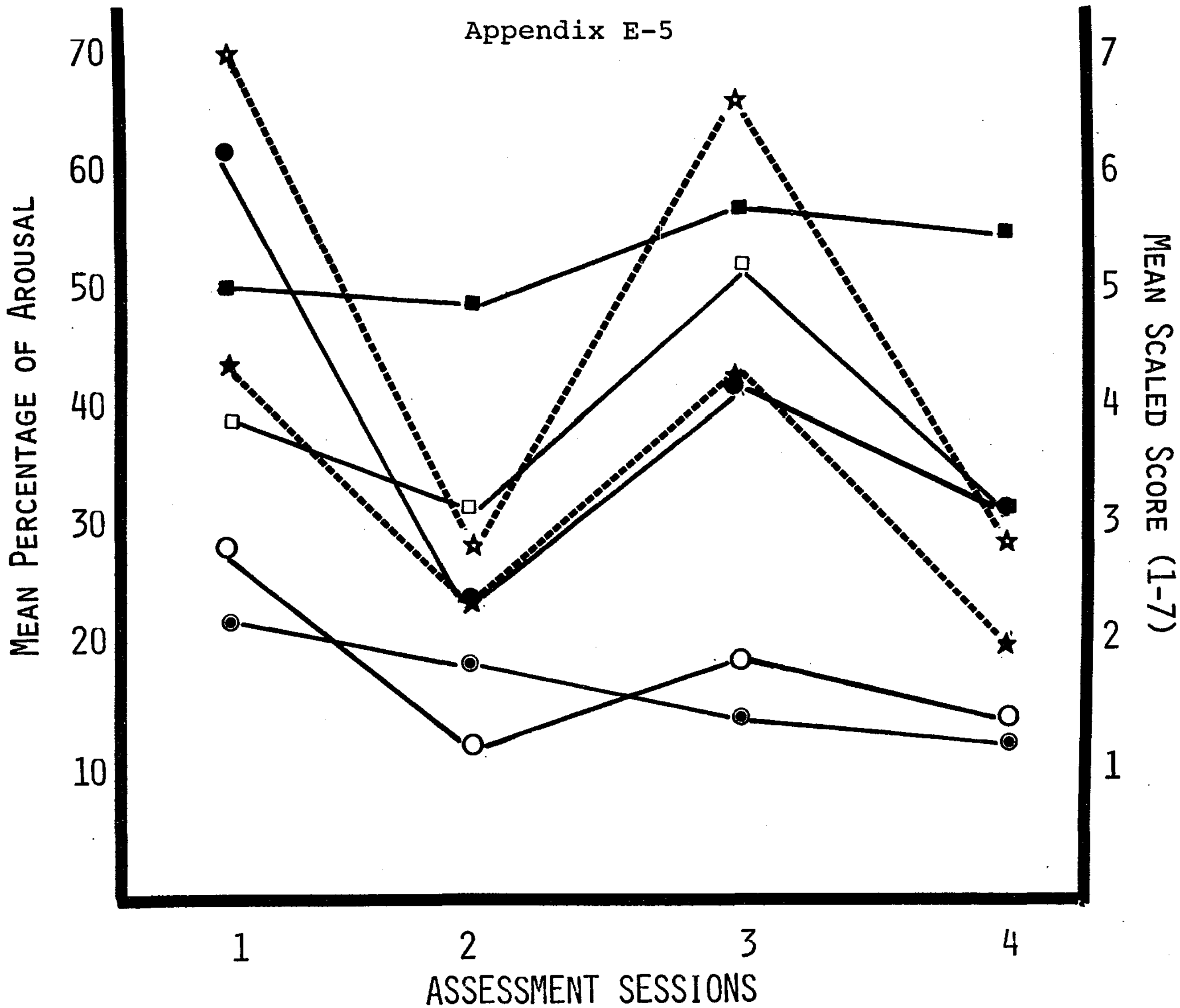
The Code For Each Measure Within Each Group

Figure 1	
Amount of arousal	2-1-1
Latency to arousal	2-2-1
Subjective Units	2-2-1
Predicted amount	1-2-1
Predicted time to arousal	2-2-1
Predicted time viewing	1-2-1
Attraction level	1-2-2
Figure 2	
Amount of arousal	1-2-1
Latency to arousal	1-2-2
Subjective units	1-1-1
Predicted amount	1-2-1
Predicted time to arousal	1-2-1
Predicted time viewing	1-2-1
Attraction Leved	2-1-2
Figure 3	
Amount of arousal	2-1-2
Latency to arousal	1-1-1
Subjective units	2-1-2
Predicted amount	2-1-1
Predicted time to arousal	2-1-1
Predicted time viewing	2-1-2
Attraction level	2-1-2
Figure 4	
Amount of arousal	2-1-1
Latency to arousal	1-2-1
Subjective units	2-1-2
Predicted amount	2-1-1
Predicted time to arousal	1-2-1
Predicted time viewing	1-2-1
Attraction level	2-1-2
Figure 5	
Amount of arousal	2-1-1
Latency to arousal	1-1-1
Subjective units	2-1-1
Predicted amount	1-1-1
Predicted time to arousal	1-1-2
Predicted time viewing	2-1-1
Attraction level	1-1-2

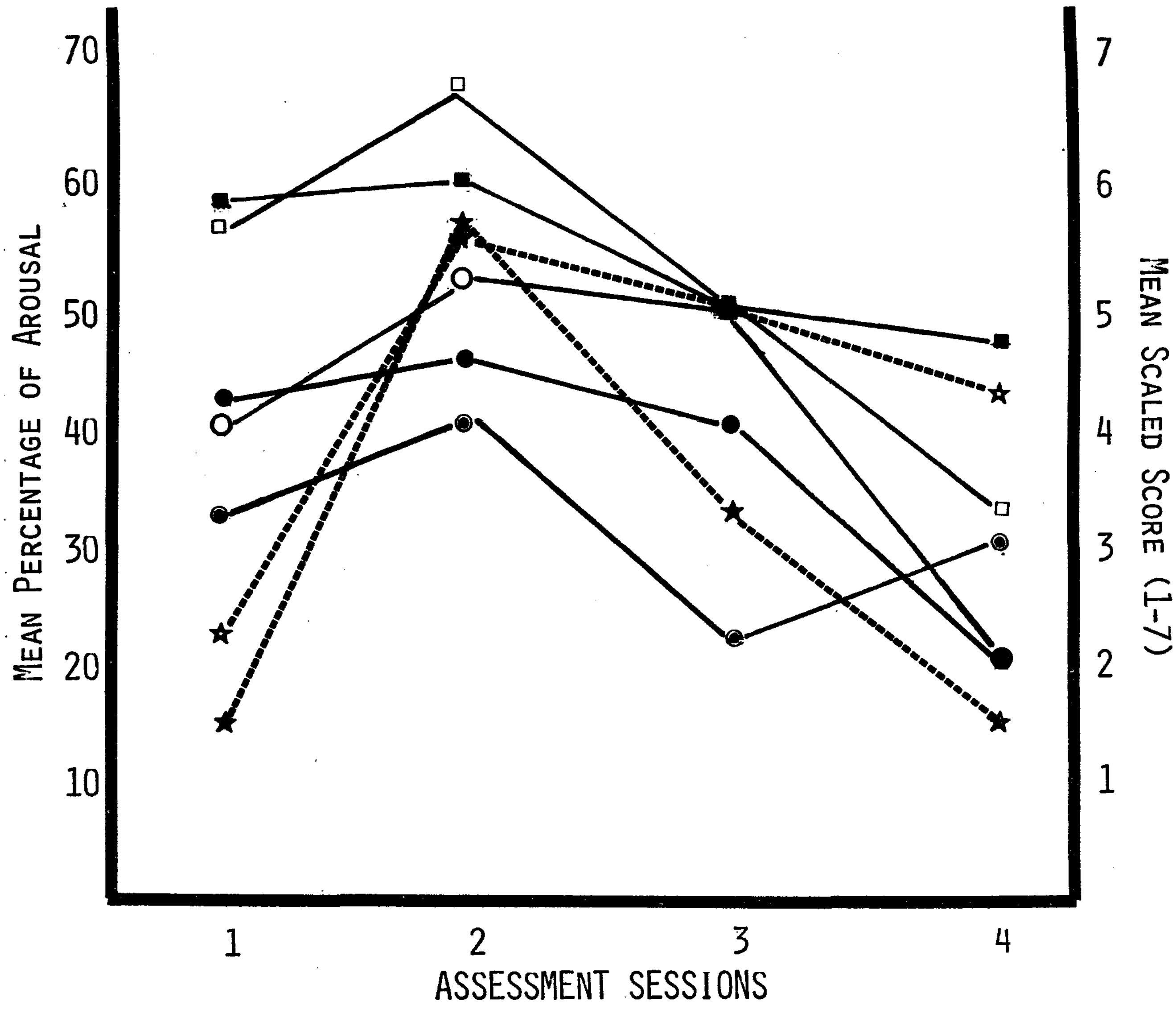
Appendix E-4 (Continued)

Figure 6	
Amount of arousal	2-2-1
Latency to arousal	1-1-2
Subjective units	1-1-1
Predicted amount	1-2-1
Predicted time of arousal	1-2-1
Predicted time viewing	2-1-1
Attraction level	1-2-2
Figure 7	
Amount of arousal	2-1-1
Latency to arousal	1-1-2
Subjective units	1-1-1
Predicted amount	2-1-2
Predicted time to arousal	1-2-1
Predicted time viewing	1-1-1
Attraction level	2-1-2

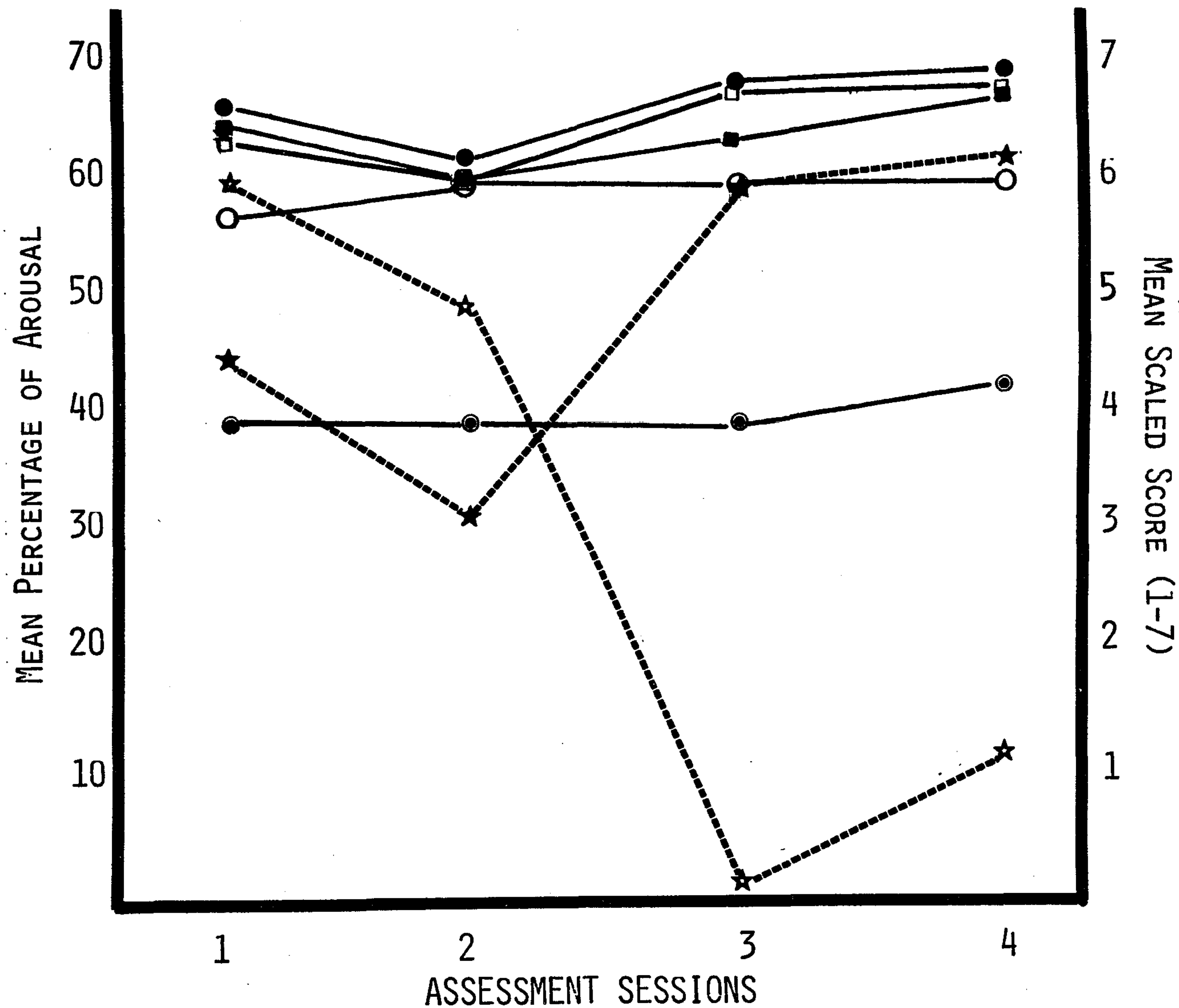
Appendix E-5



Subject 1 Public-Female



Subject 2 Public-Female



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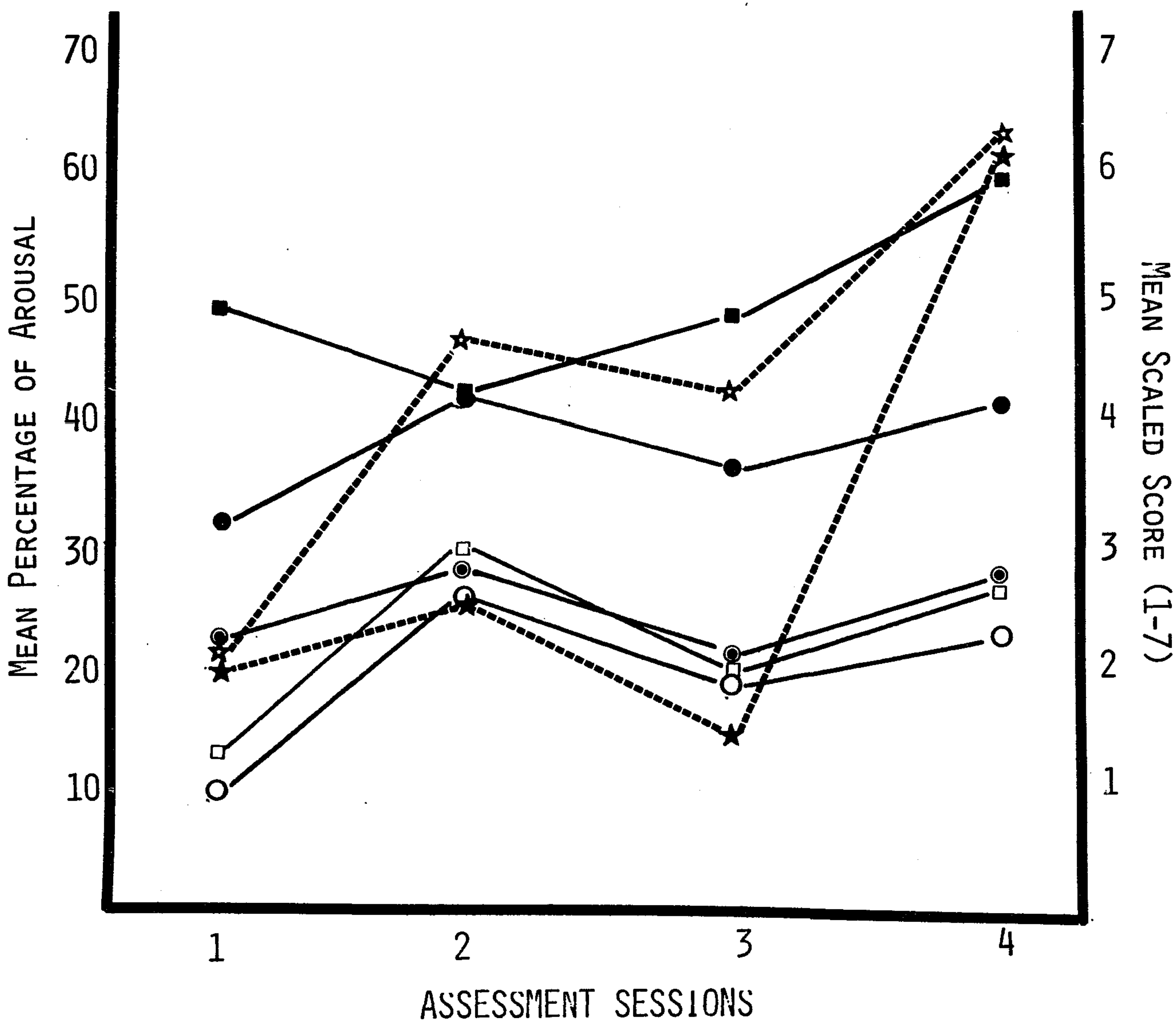
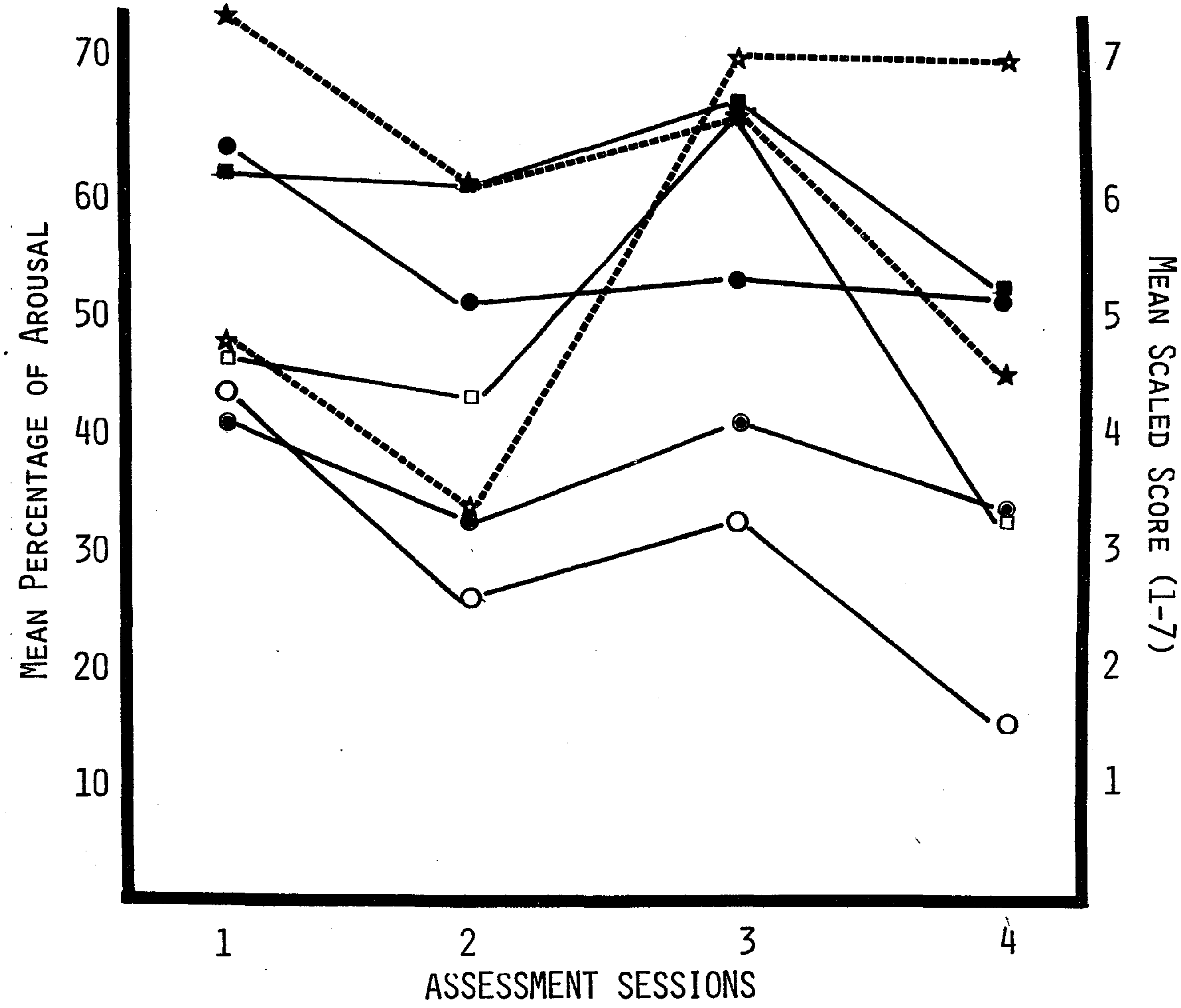
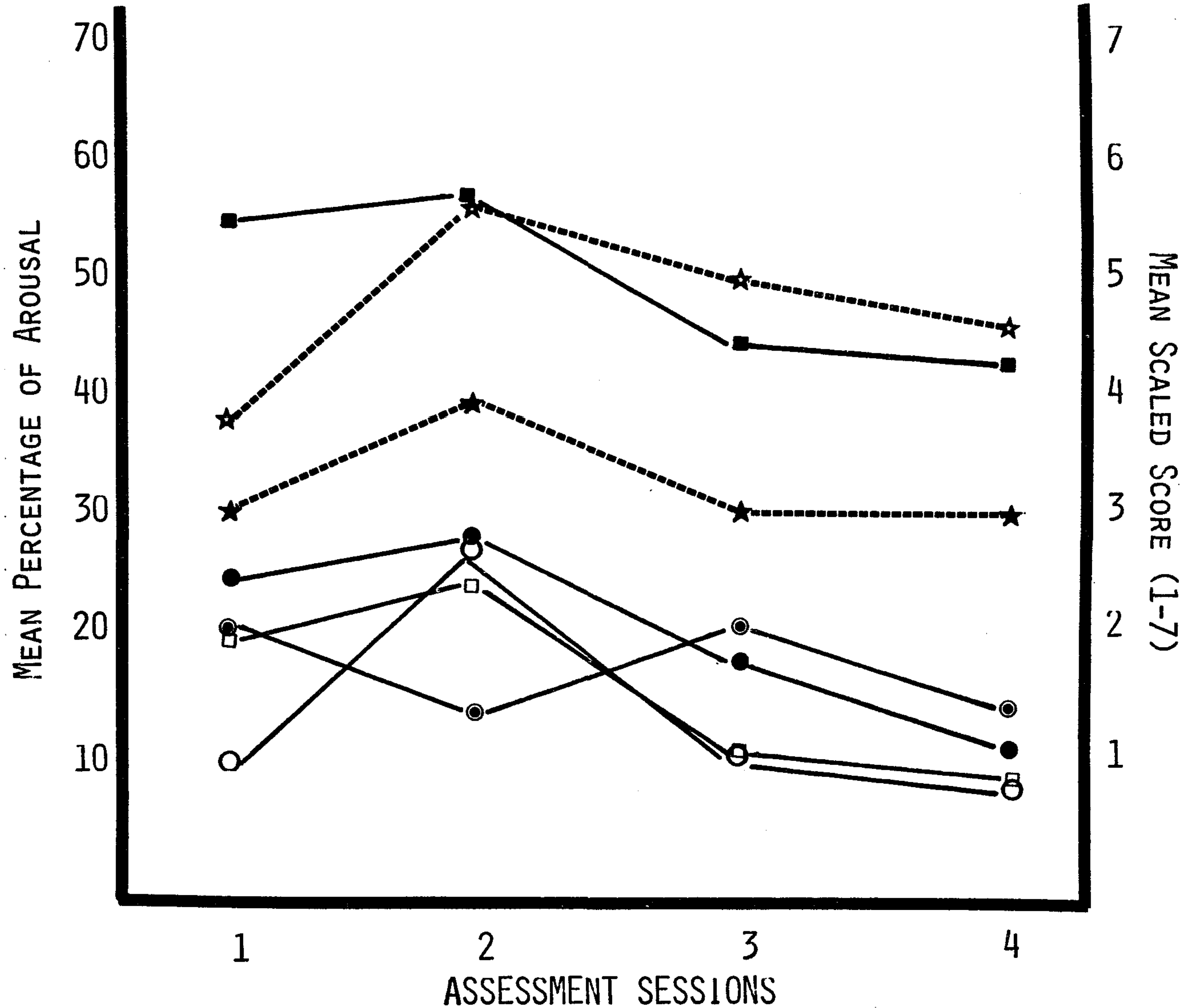


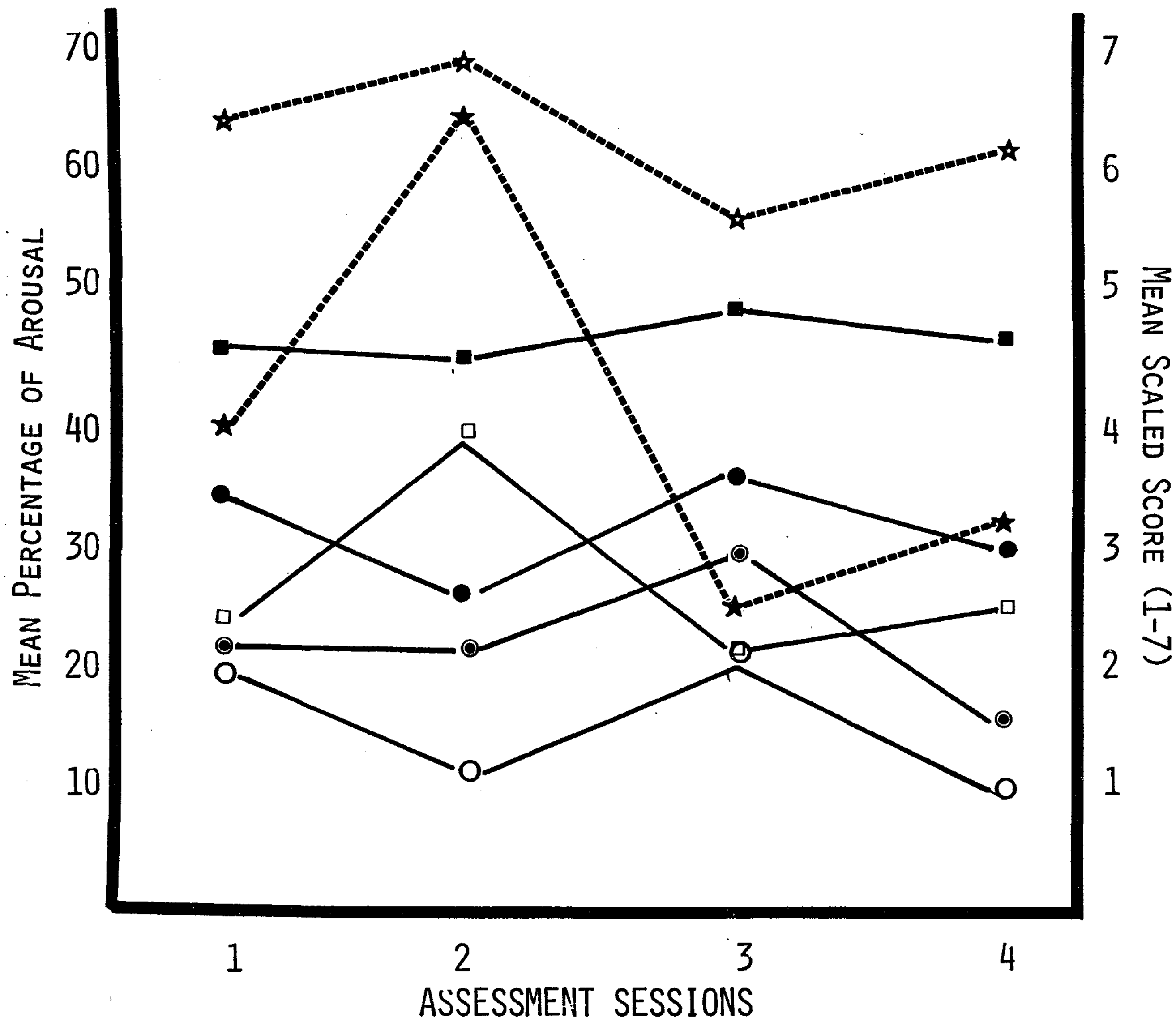
SUBJECT 4 PUBLIC-FEMALE



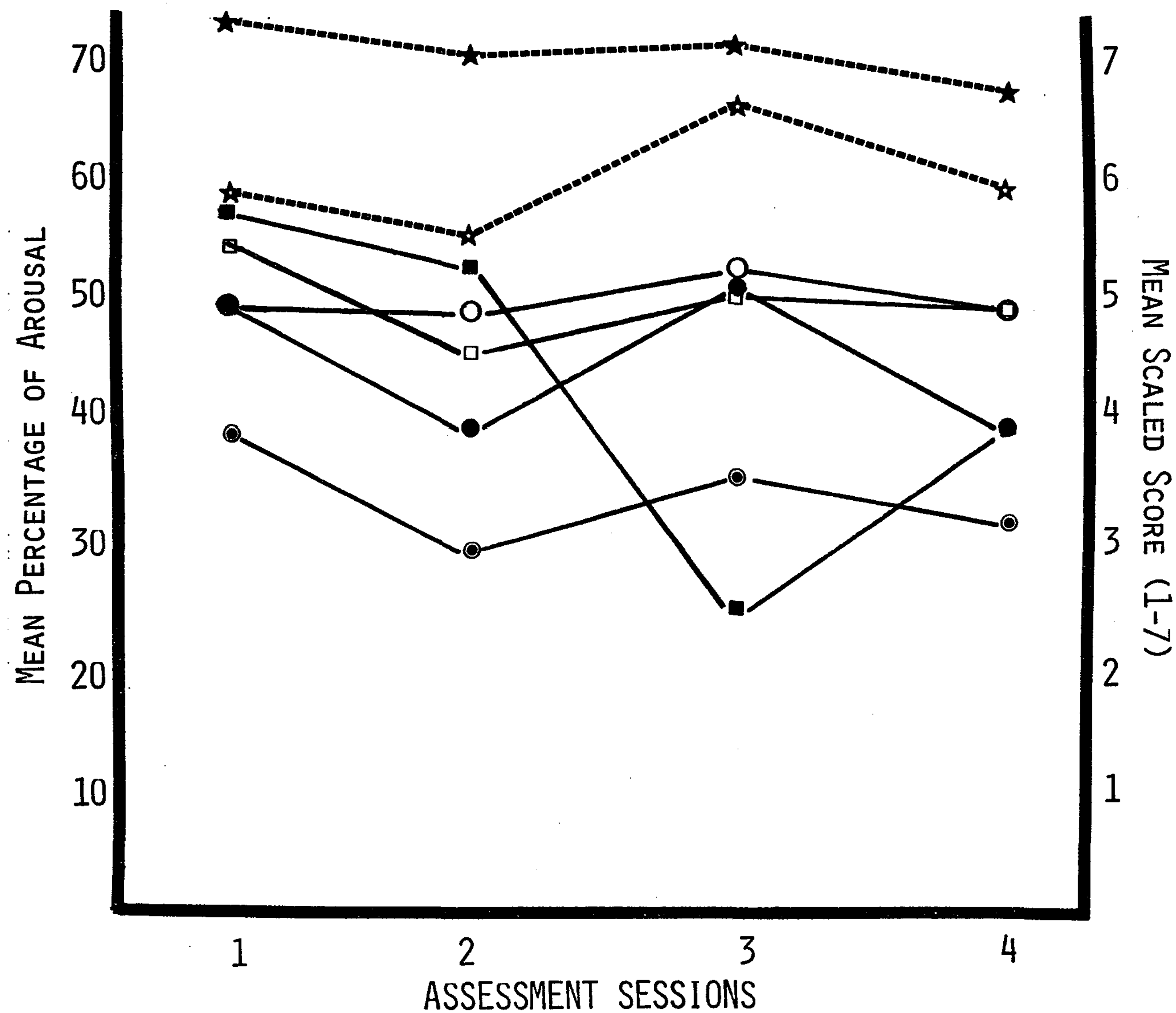
Subject 5 Public-Female



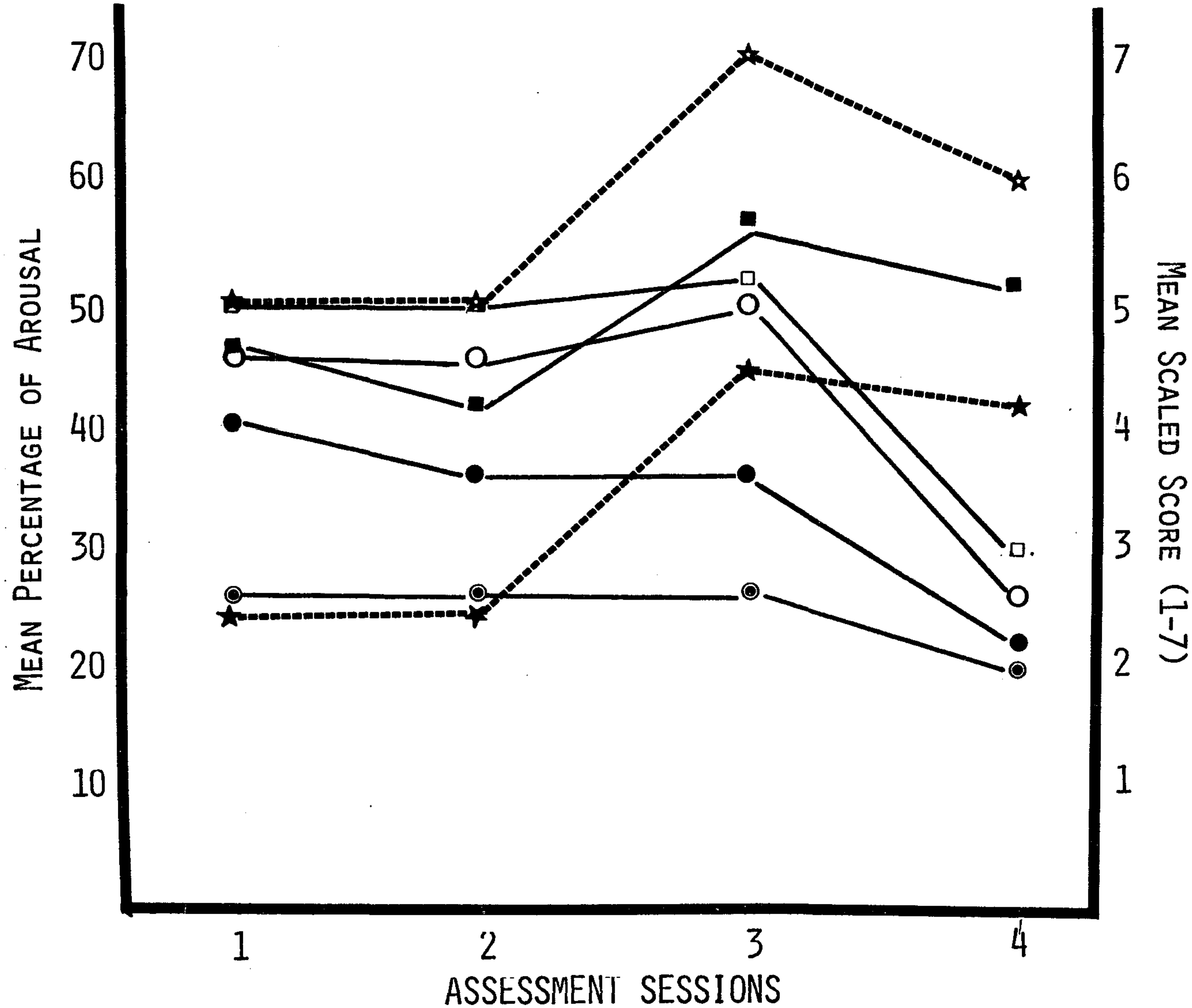
Subject 6 Public-Female



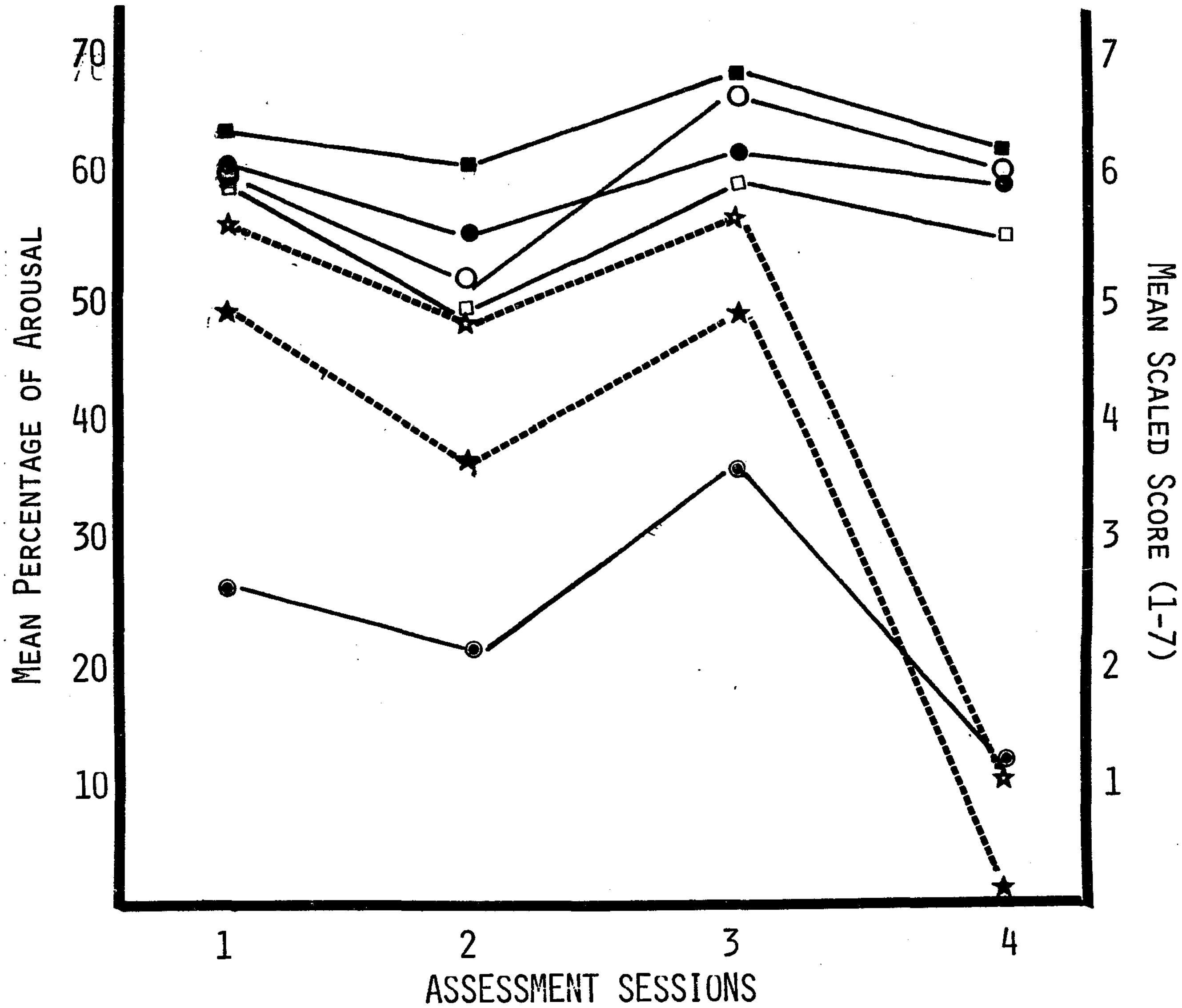
Subject 7 Public-Female



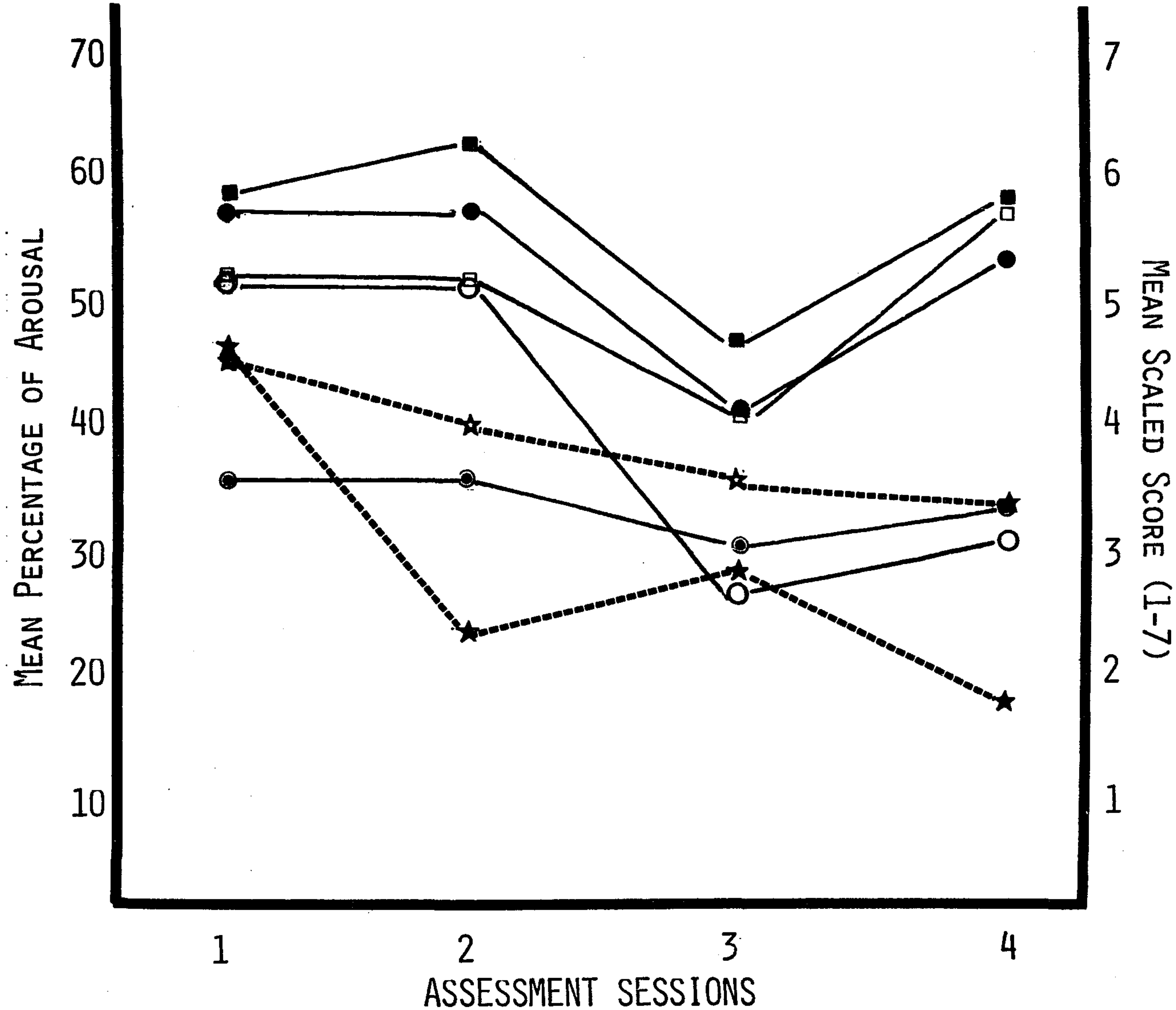
Subject 8 Public-Female



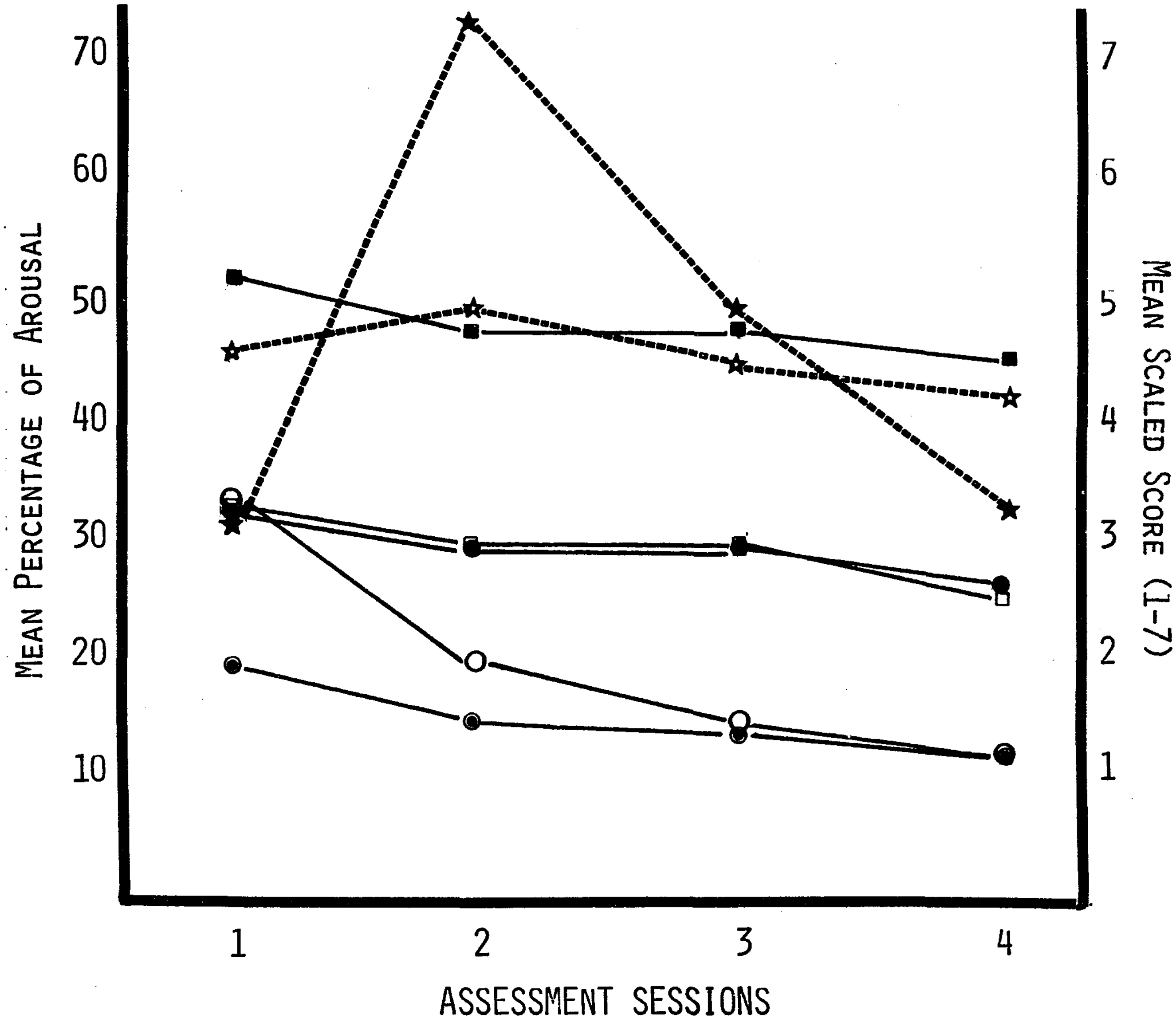
Subject 9 Public-Female



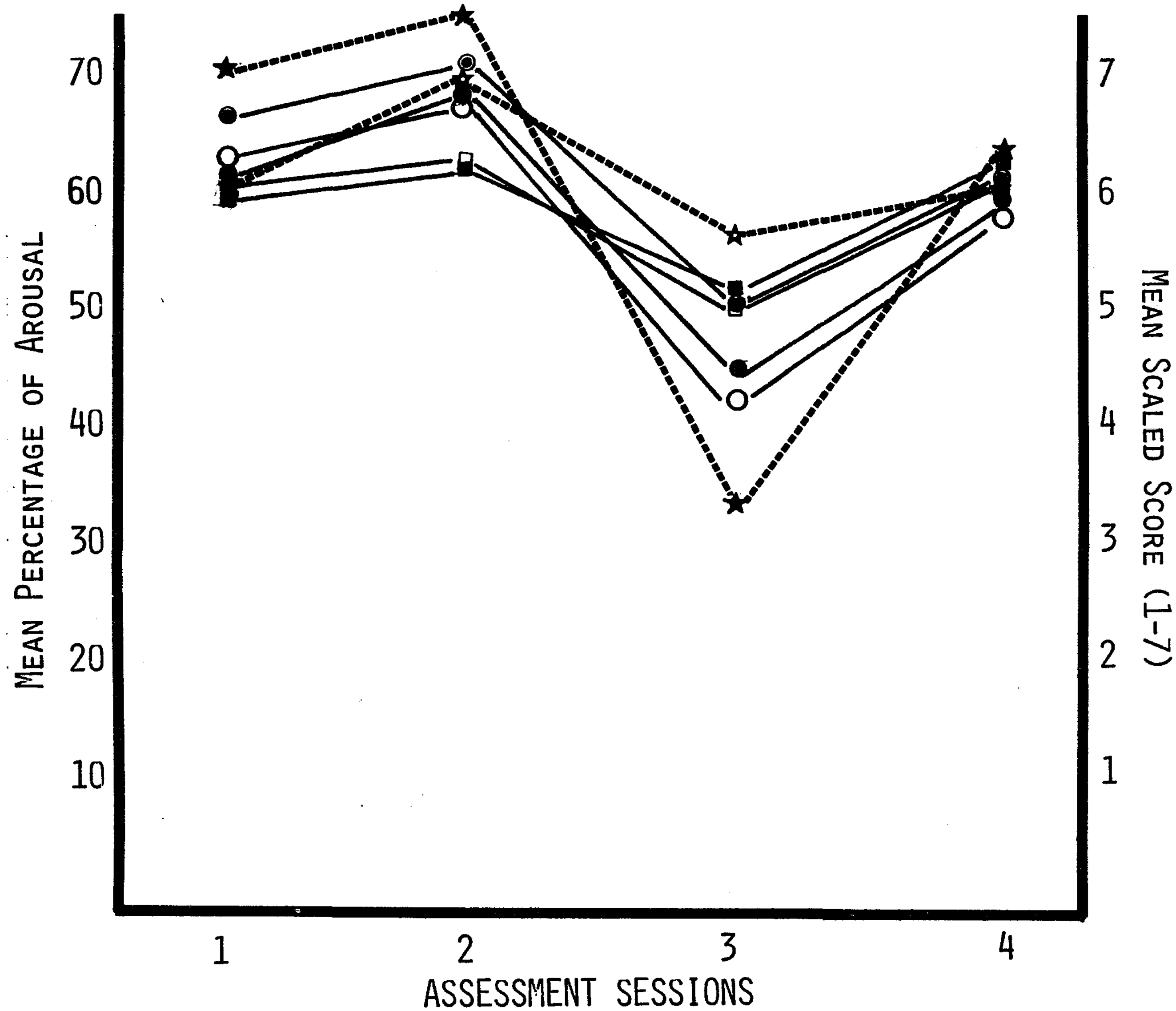
Subject 10 Public-Female



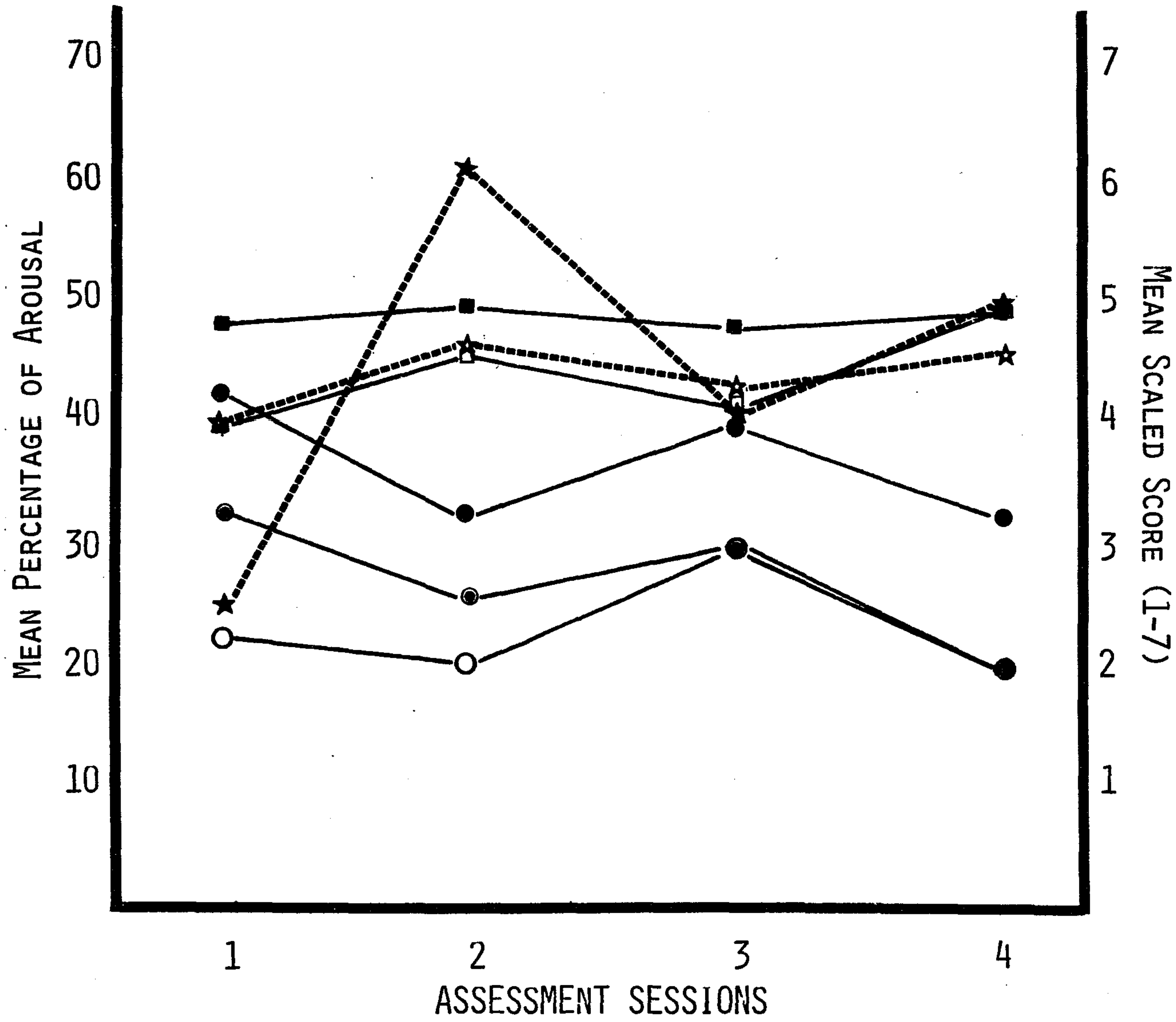
SUBJECT 11 PRIVATE-FEMALE



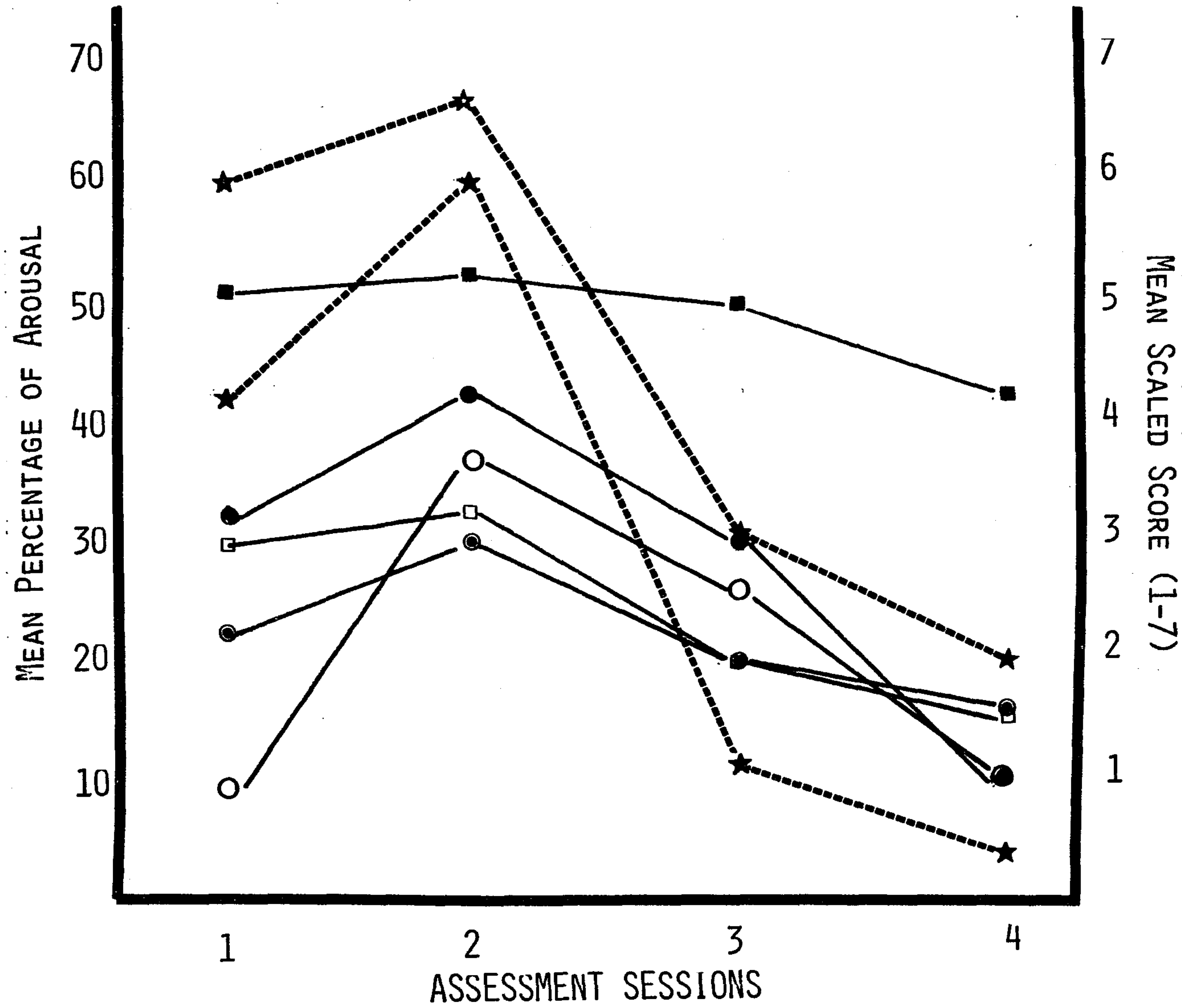
Subject 12 Private-Female



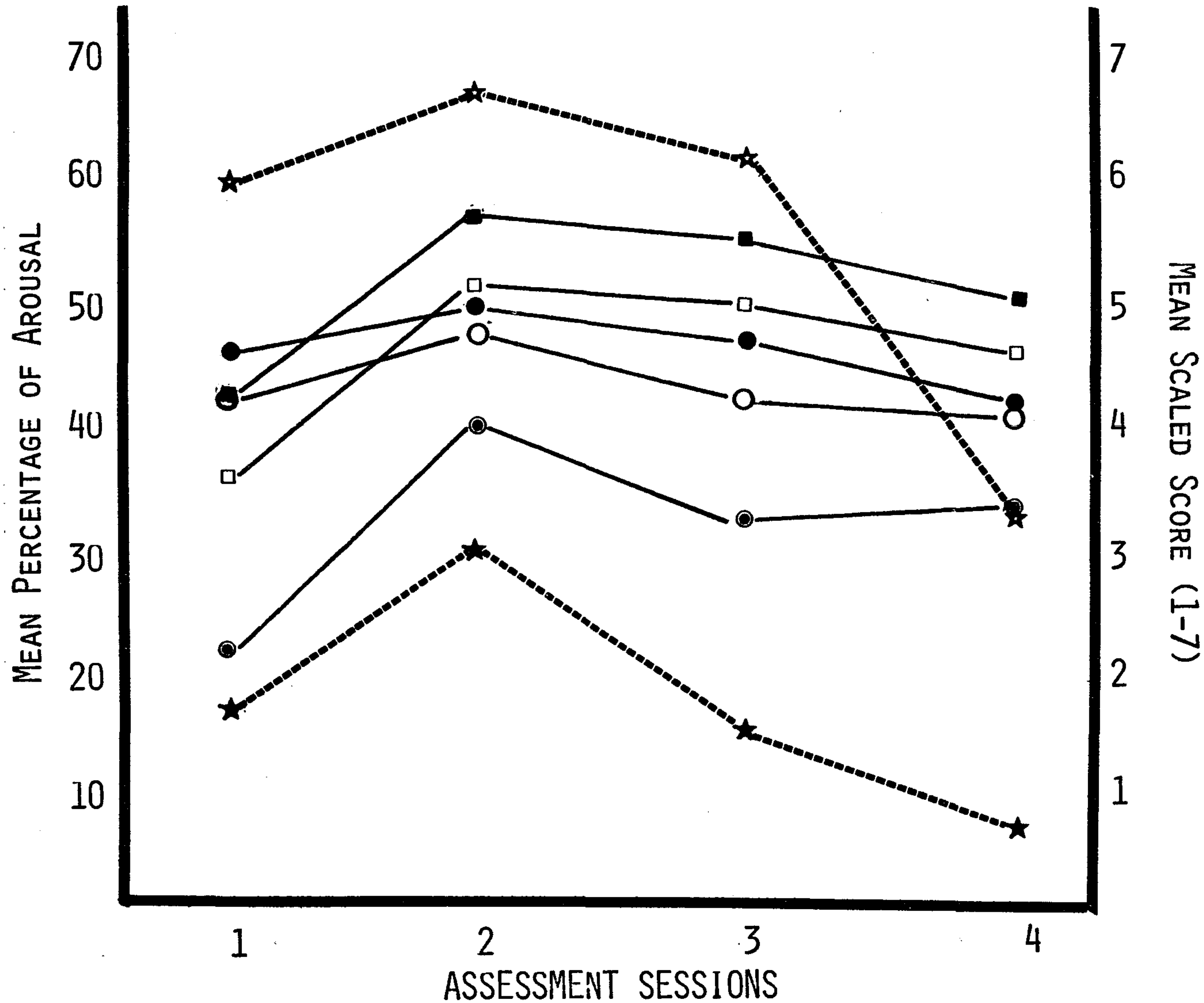
Subject 13 Private-Female



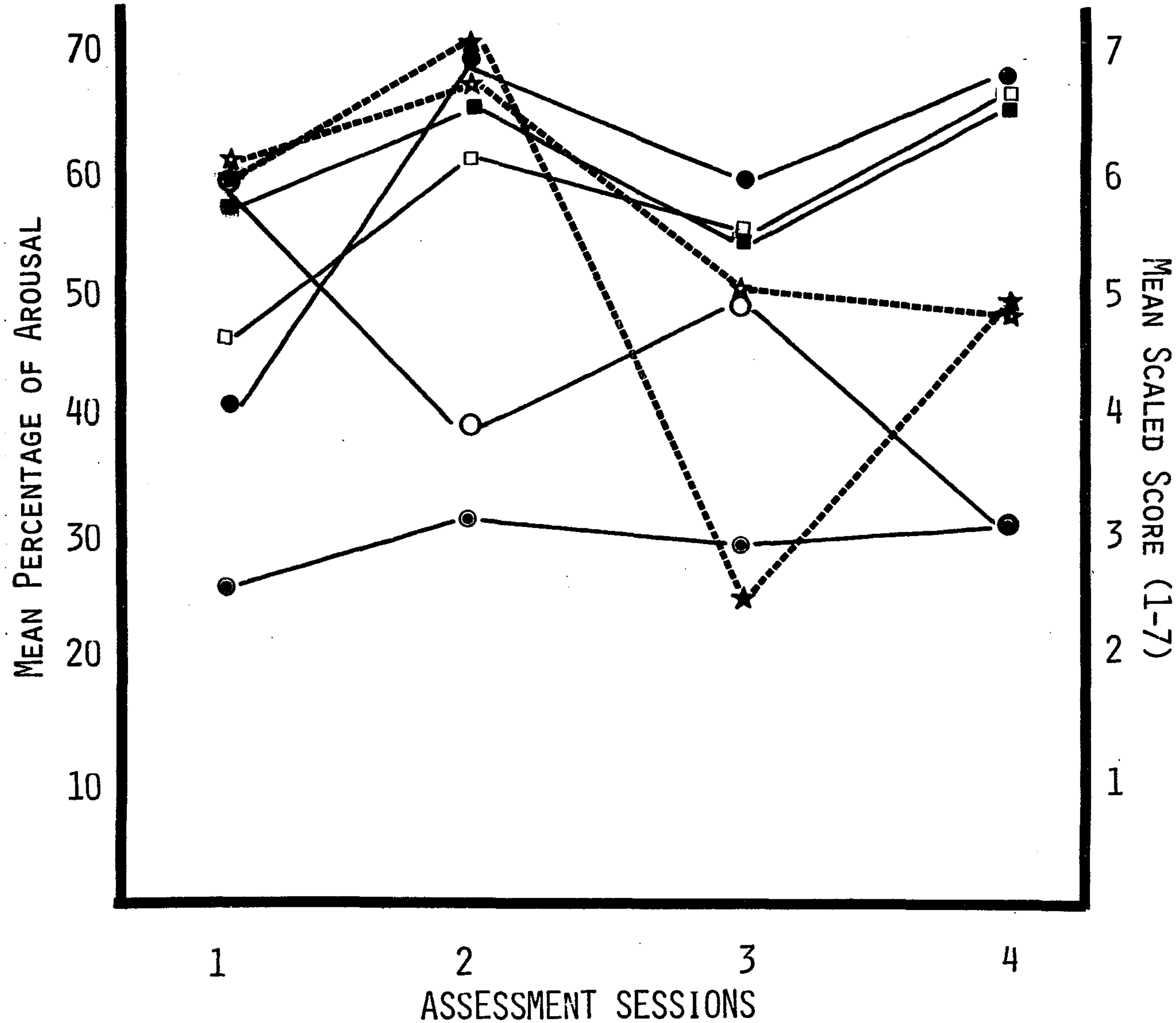
Subject 14 Private-Female



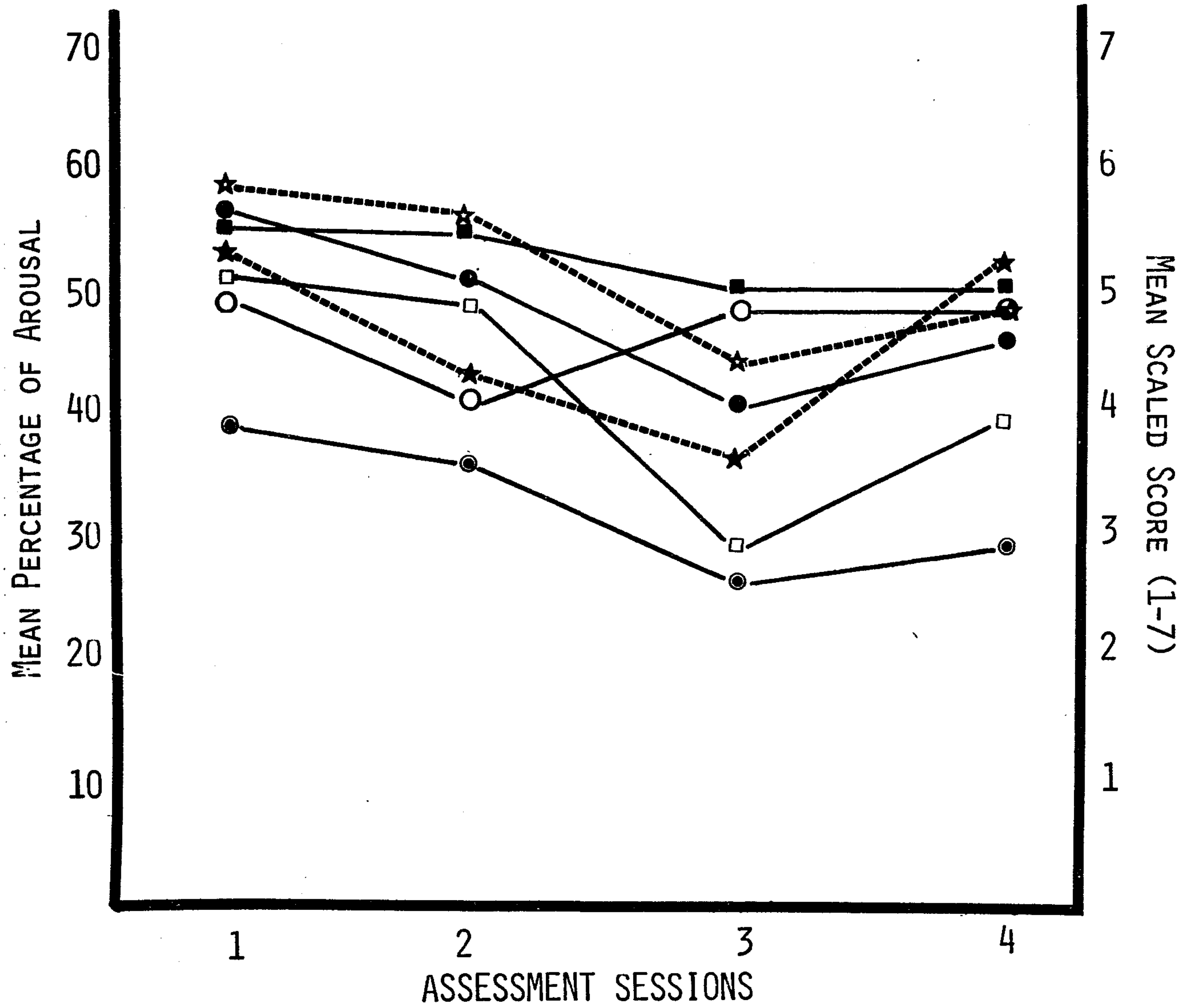
Subject 15 Private-Female



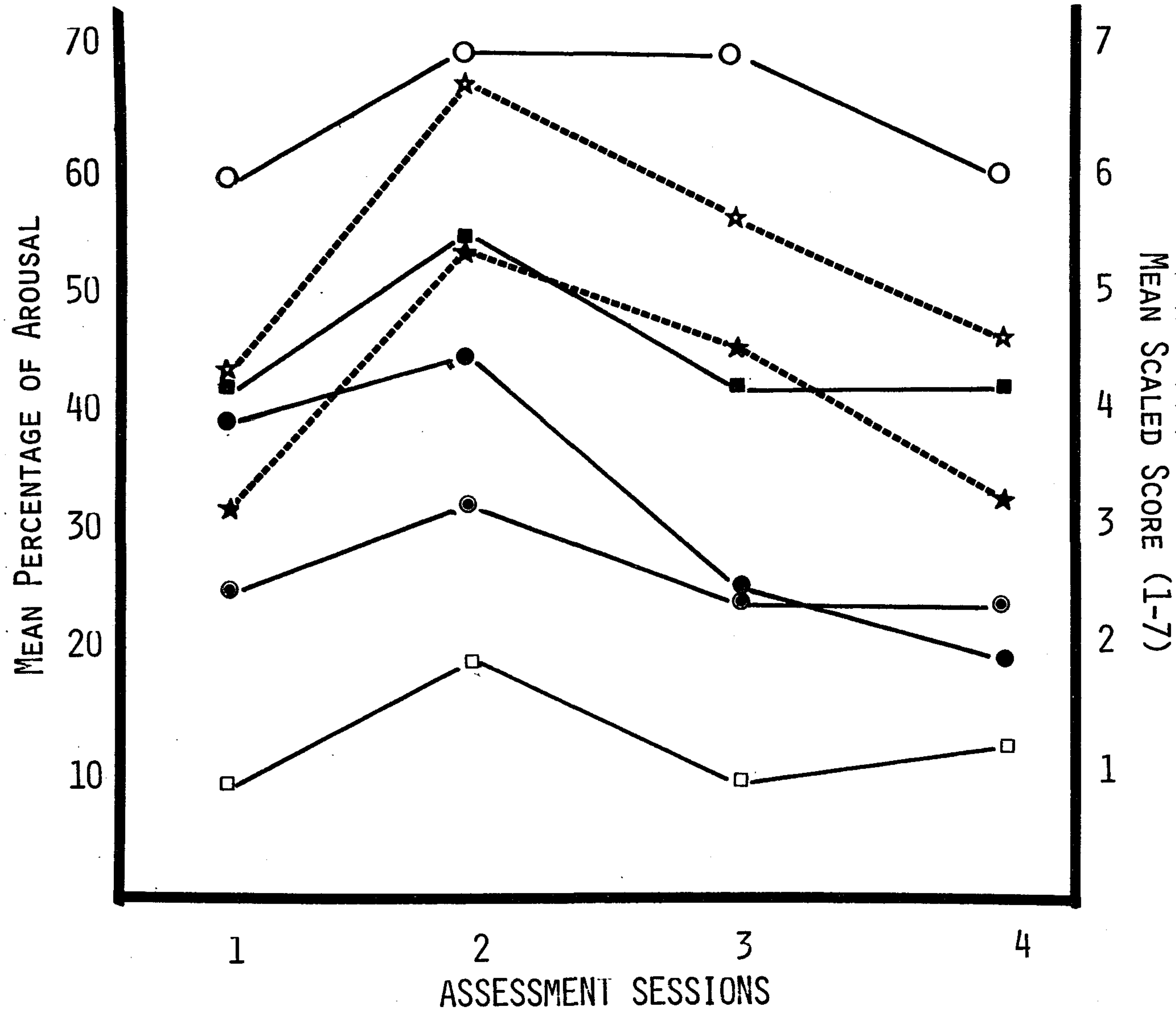
Subject 16 Private-Female



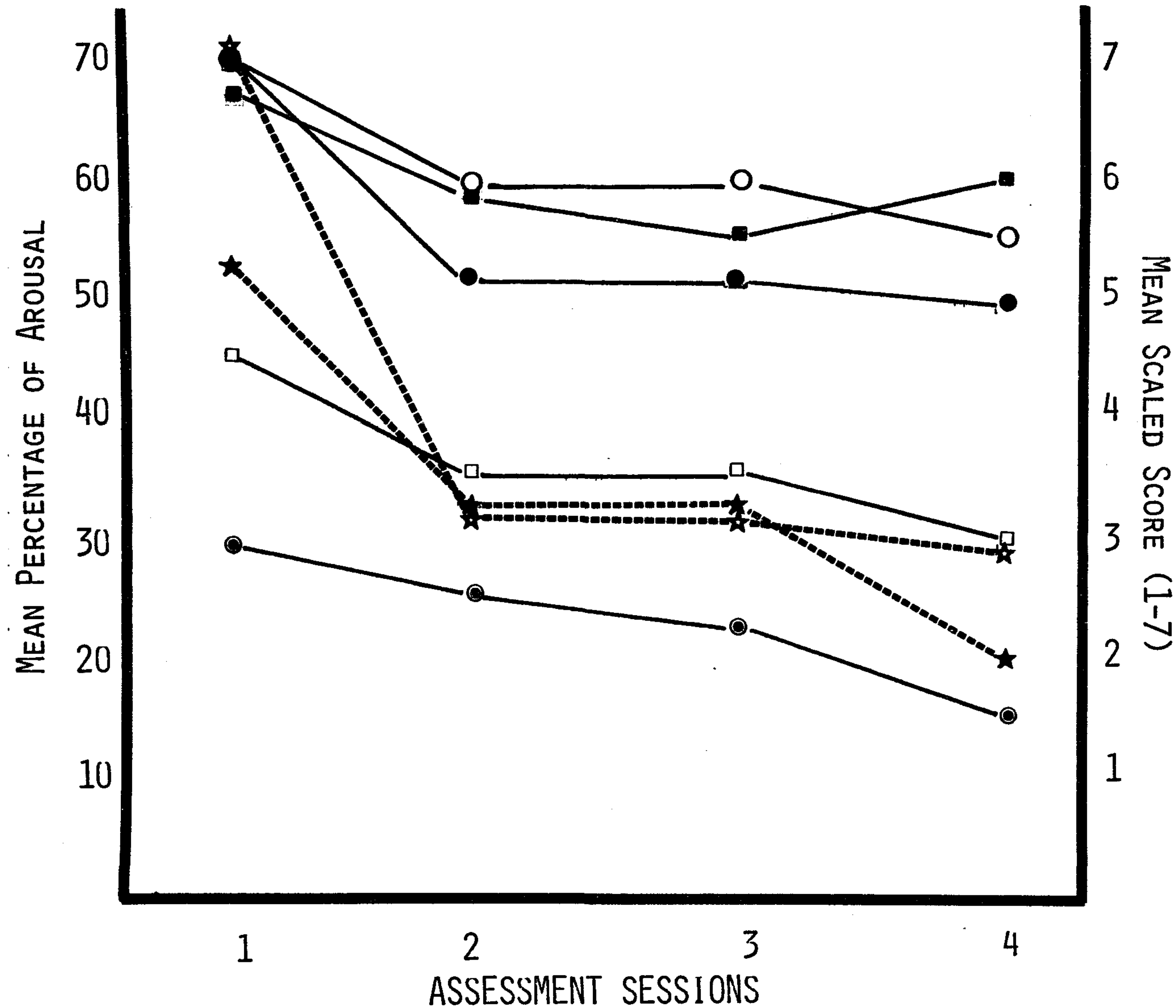
SUBJECT 17 PRIVATE-FEMALE



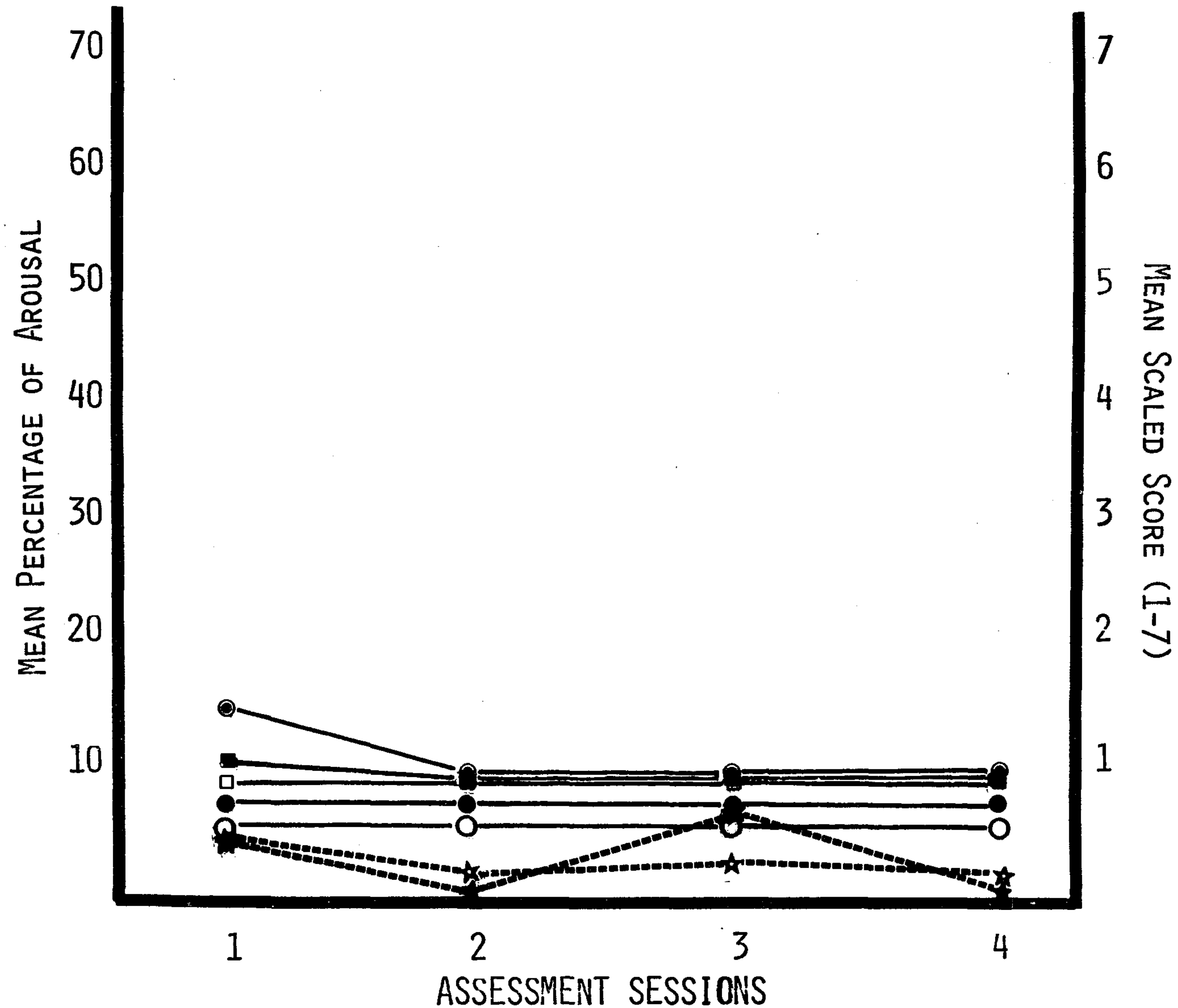
Subject 18 Private-Female



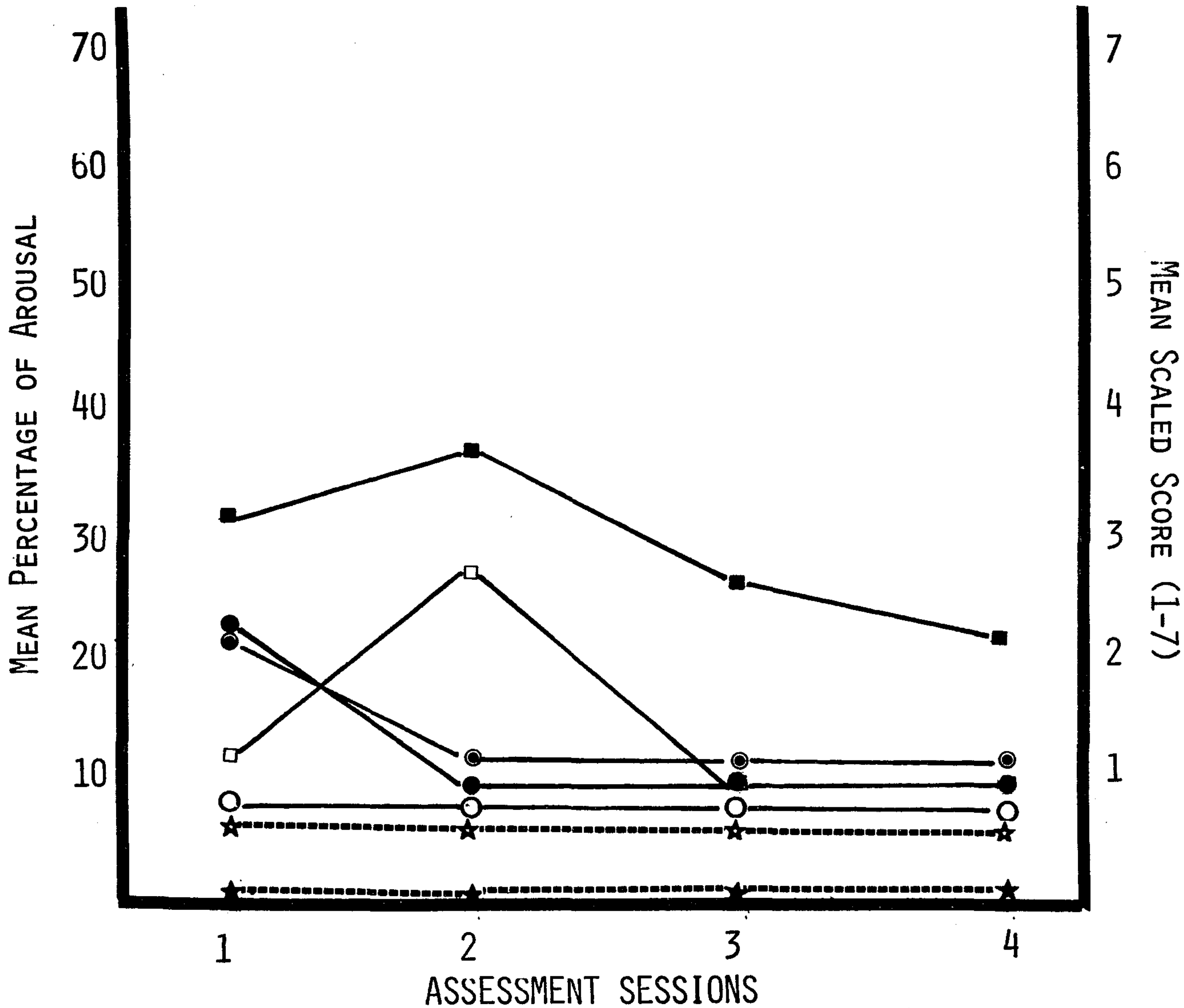
Subject 19 Private-Female



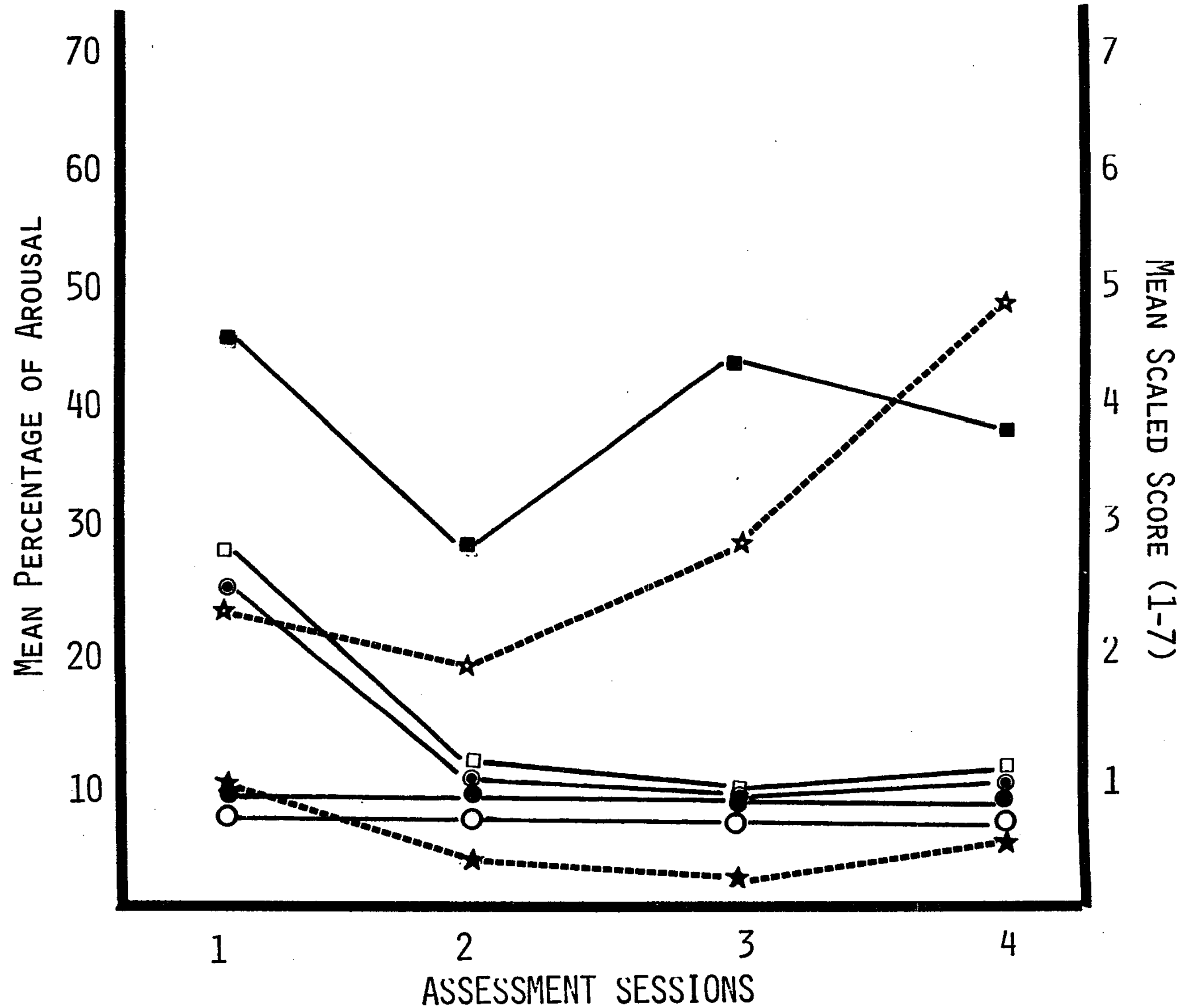
SUBJECT 20 PRIVATE-FEMALE



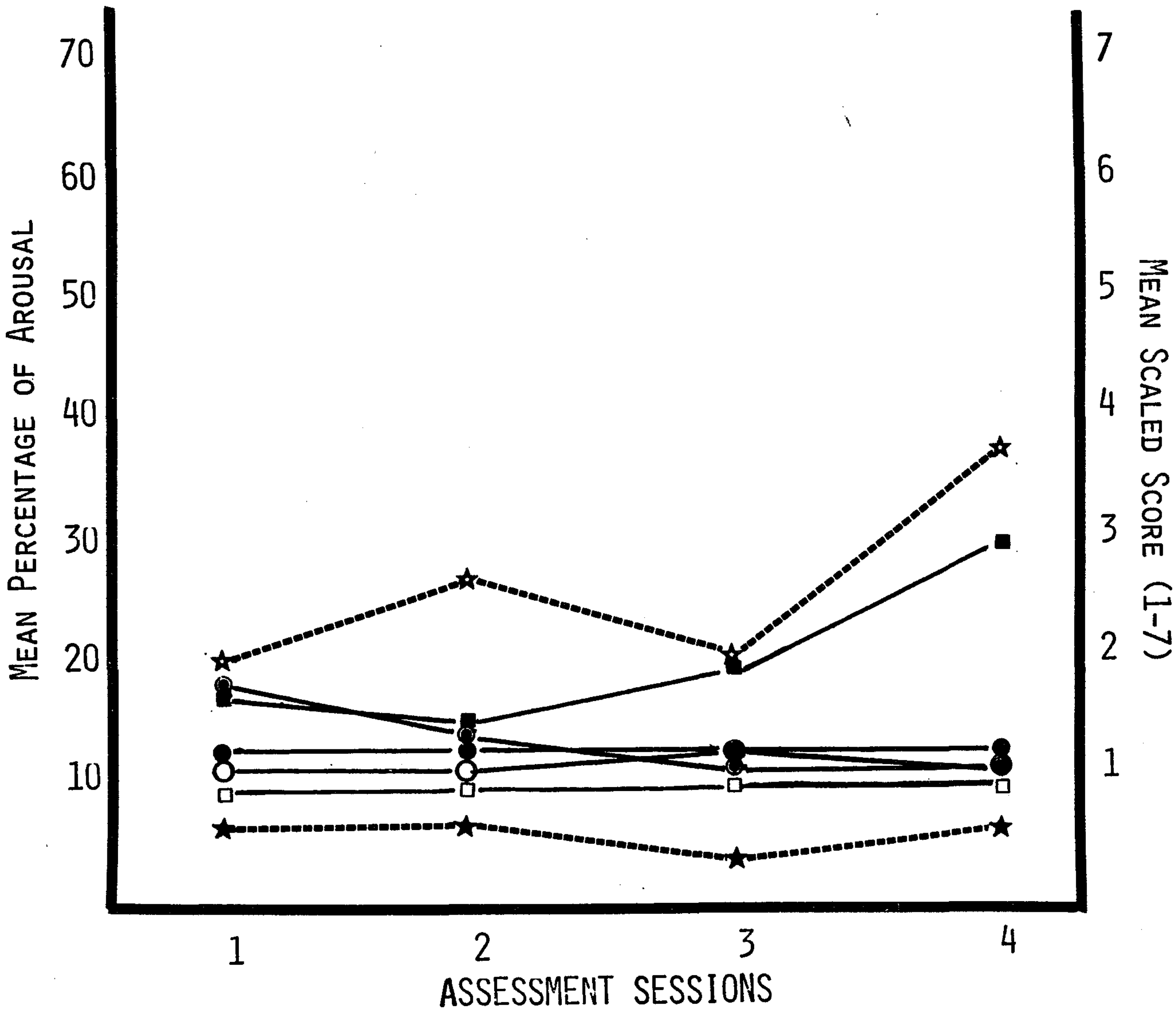
Subject 1 Public-Male



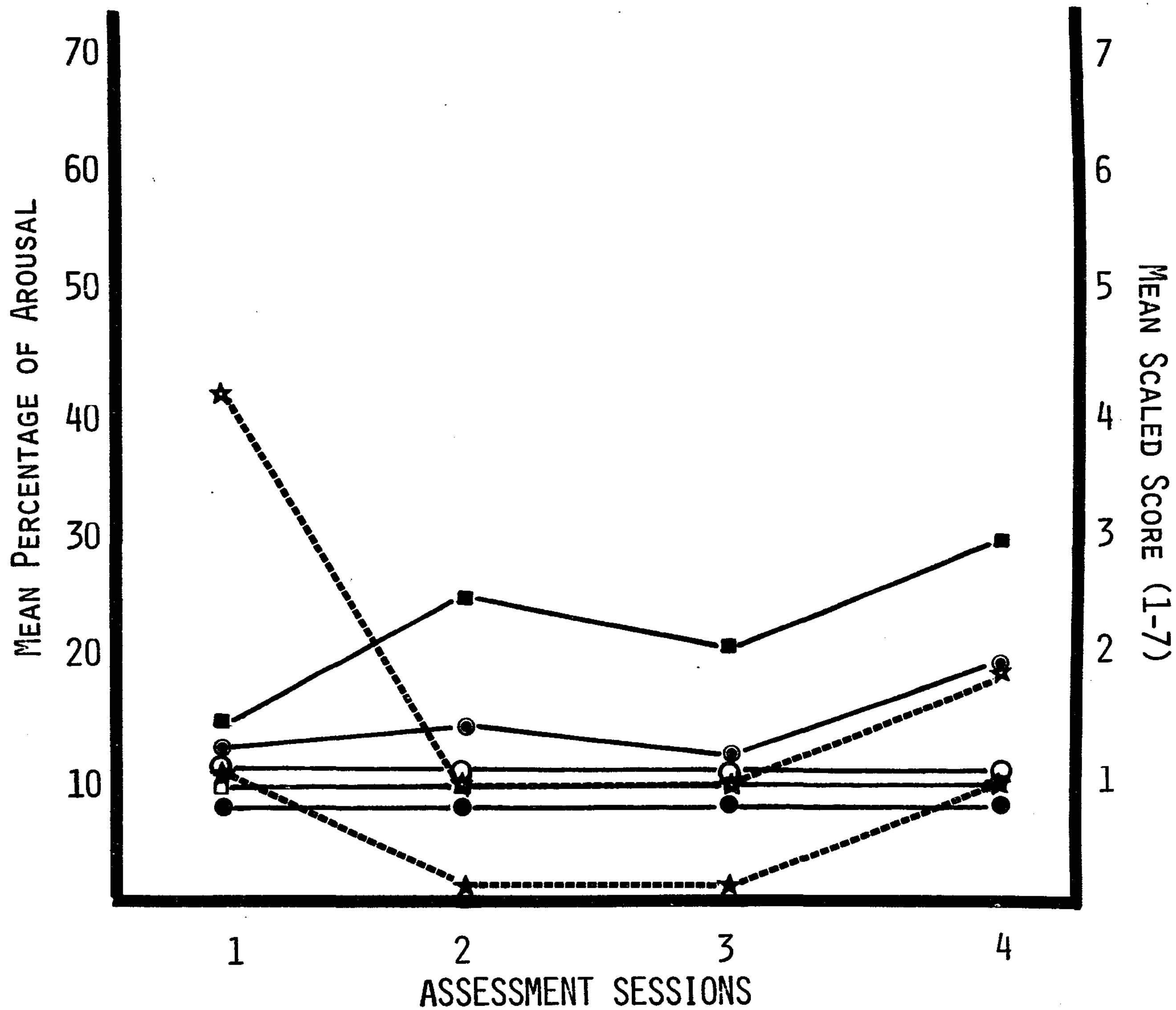
Subject 2 Public-Male



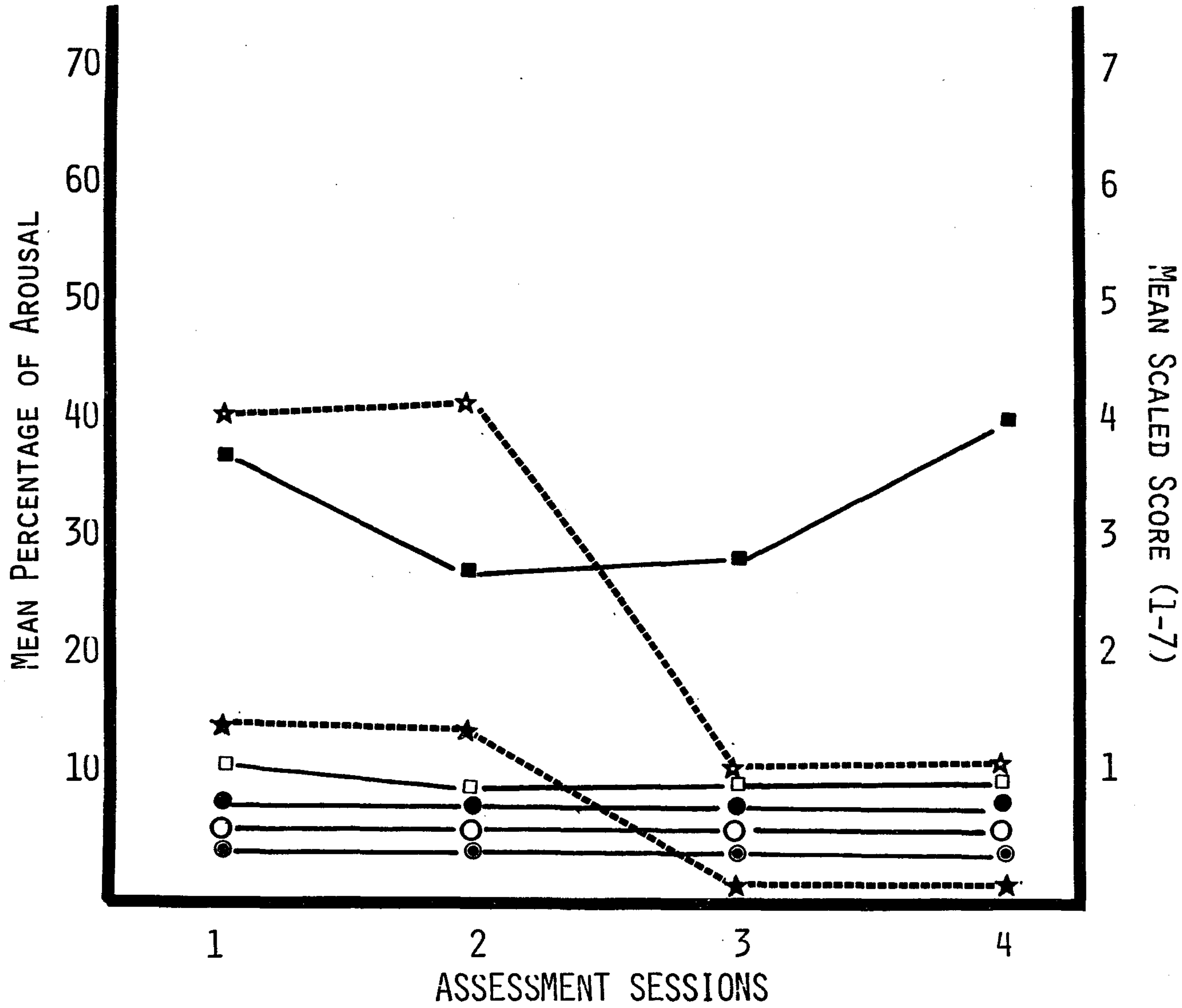
Subject 3 Public-Male



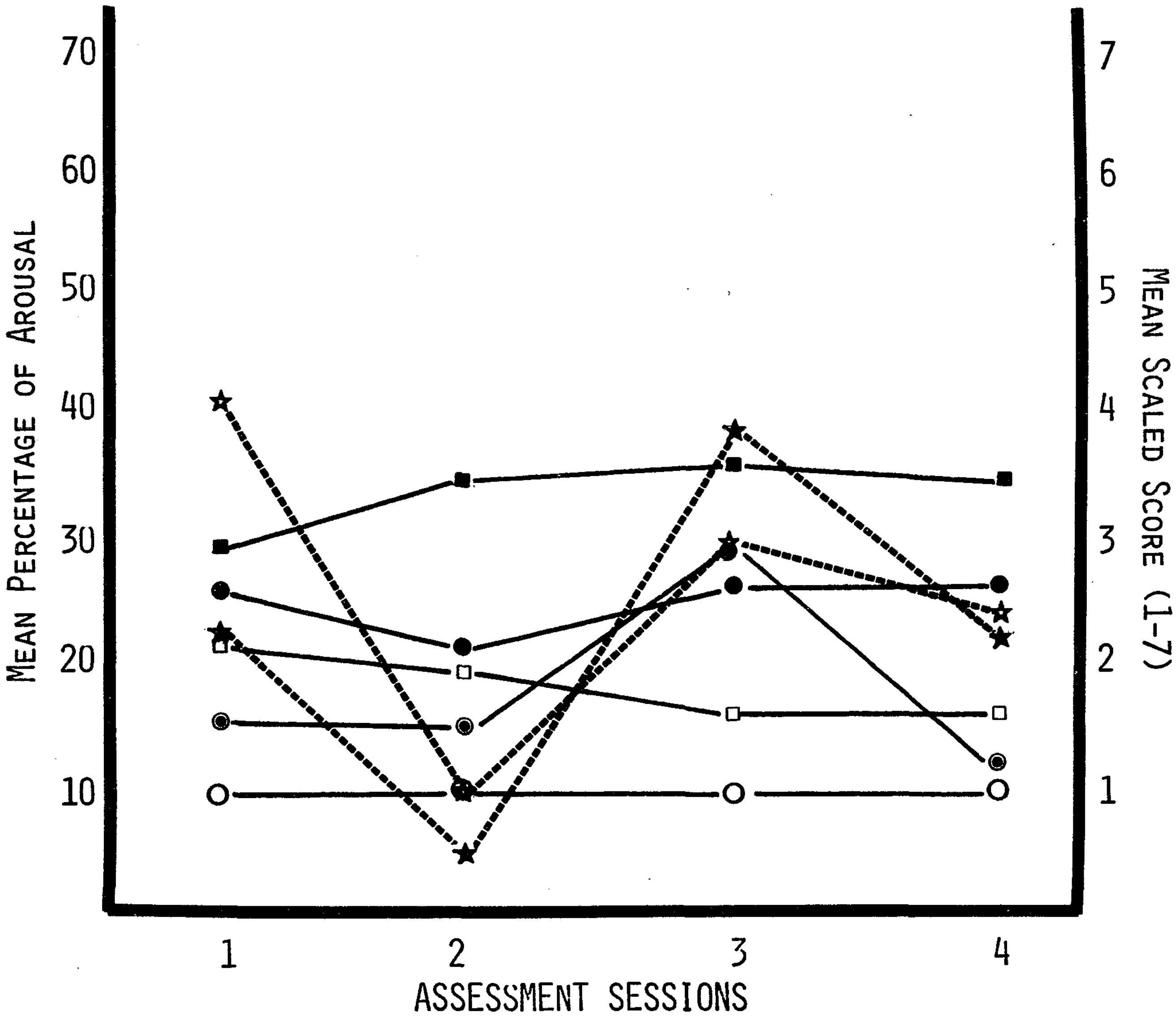
SUBJECT 4 PUBLIC-MALE



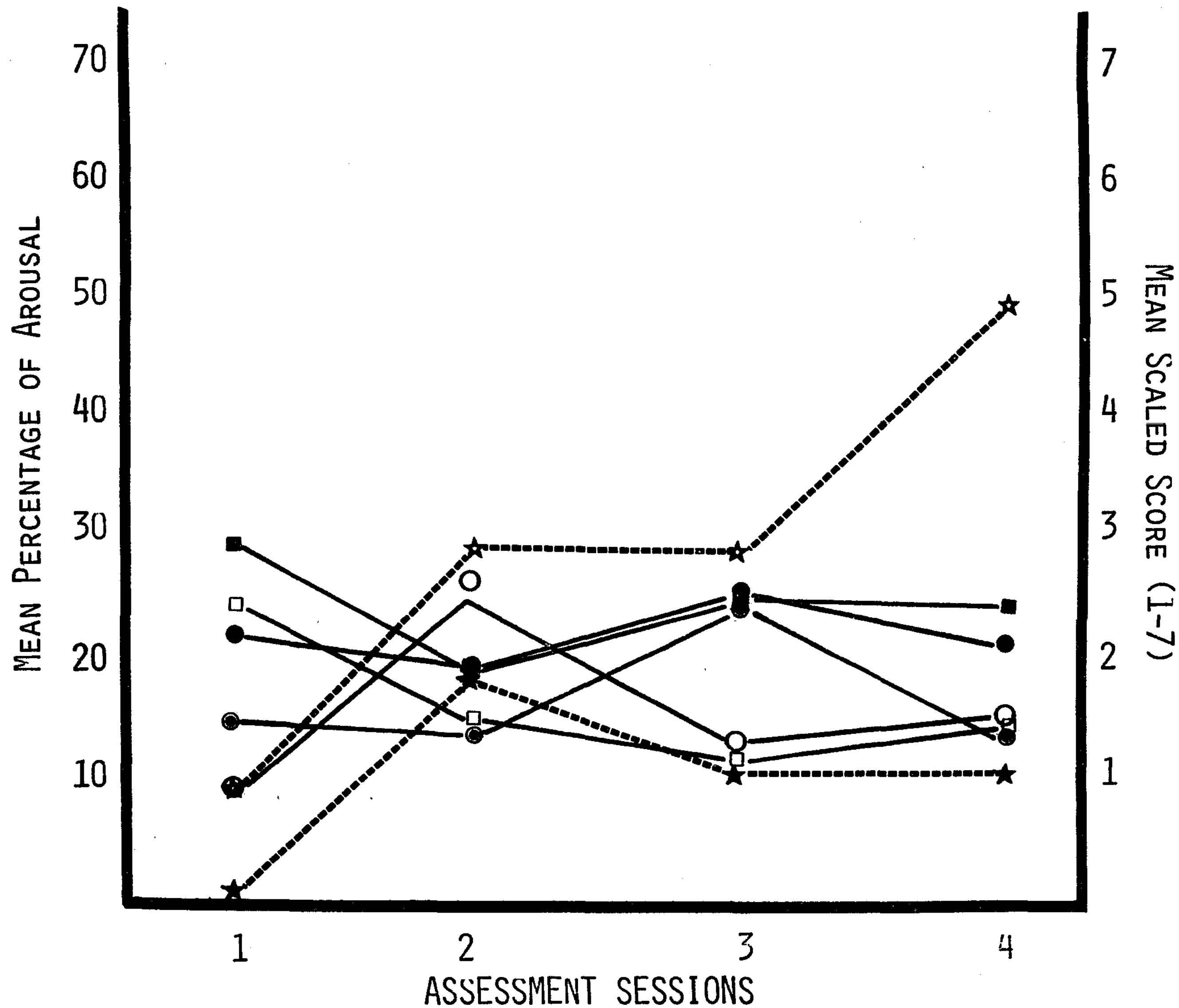
SUBJECT 5 PUBLIC-MALE



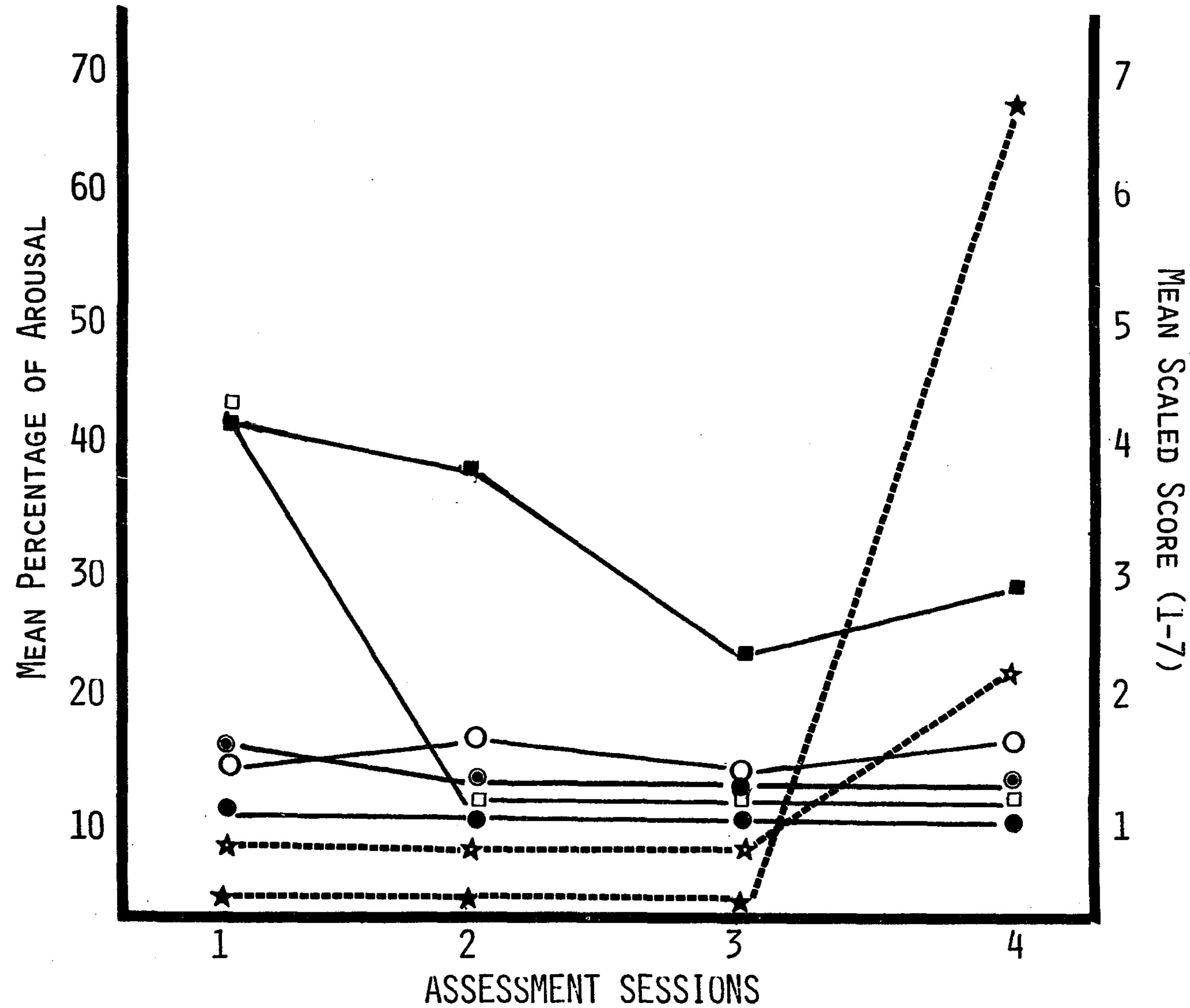
Subject 6 Public-Male



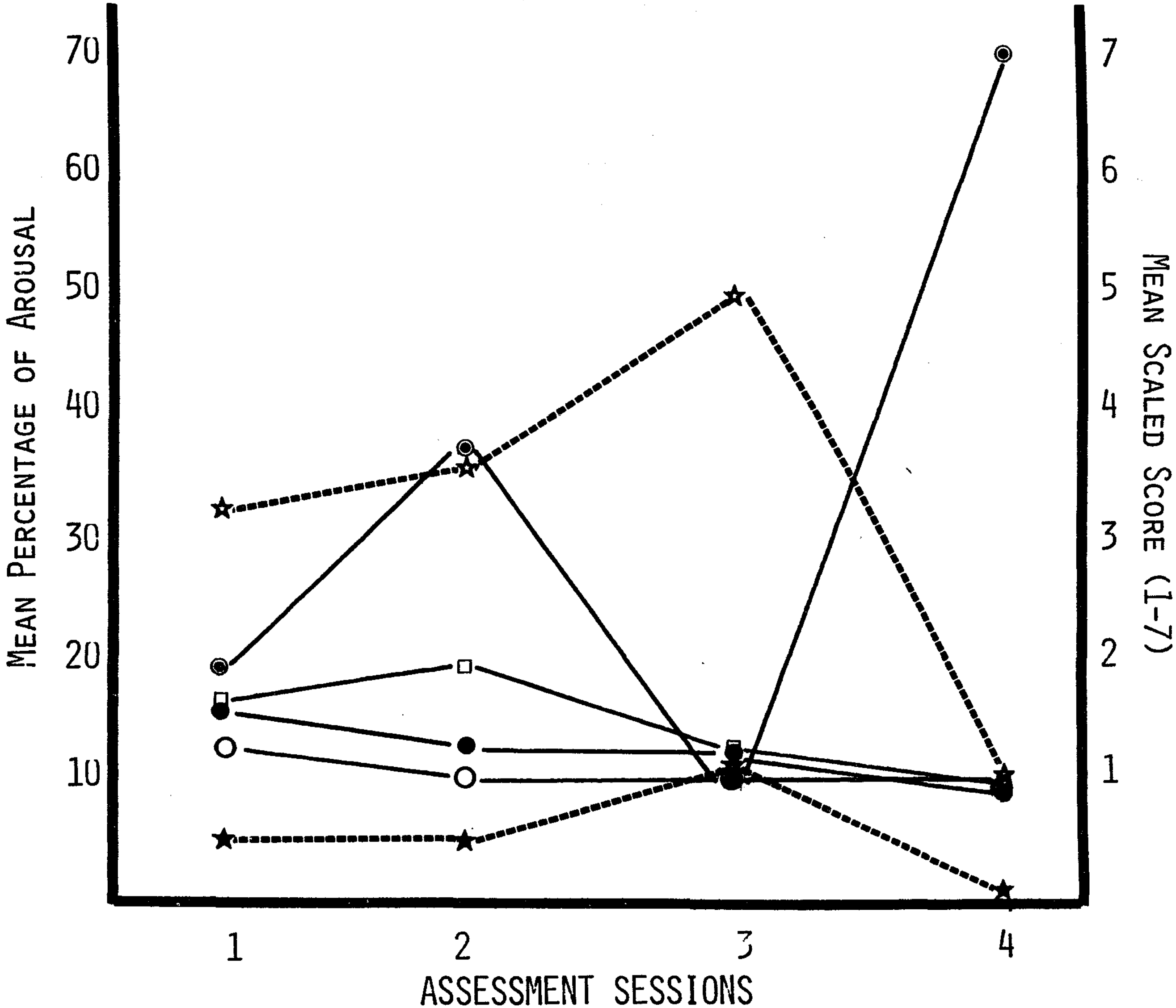
Subject 7 Public-Male



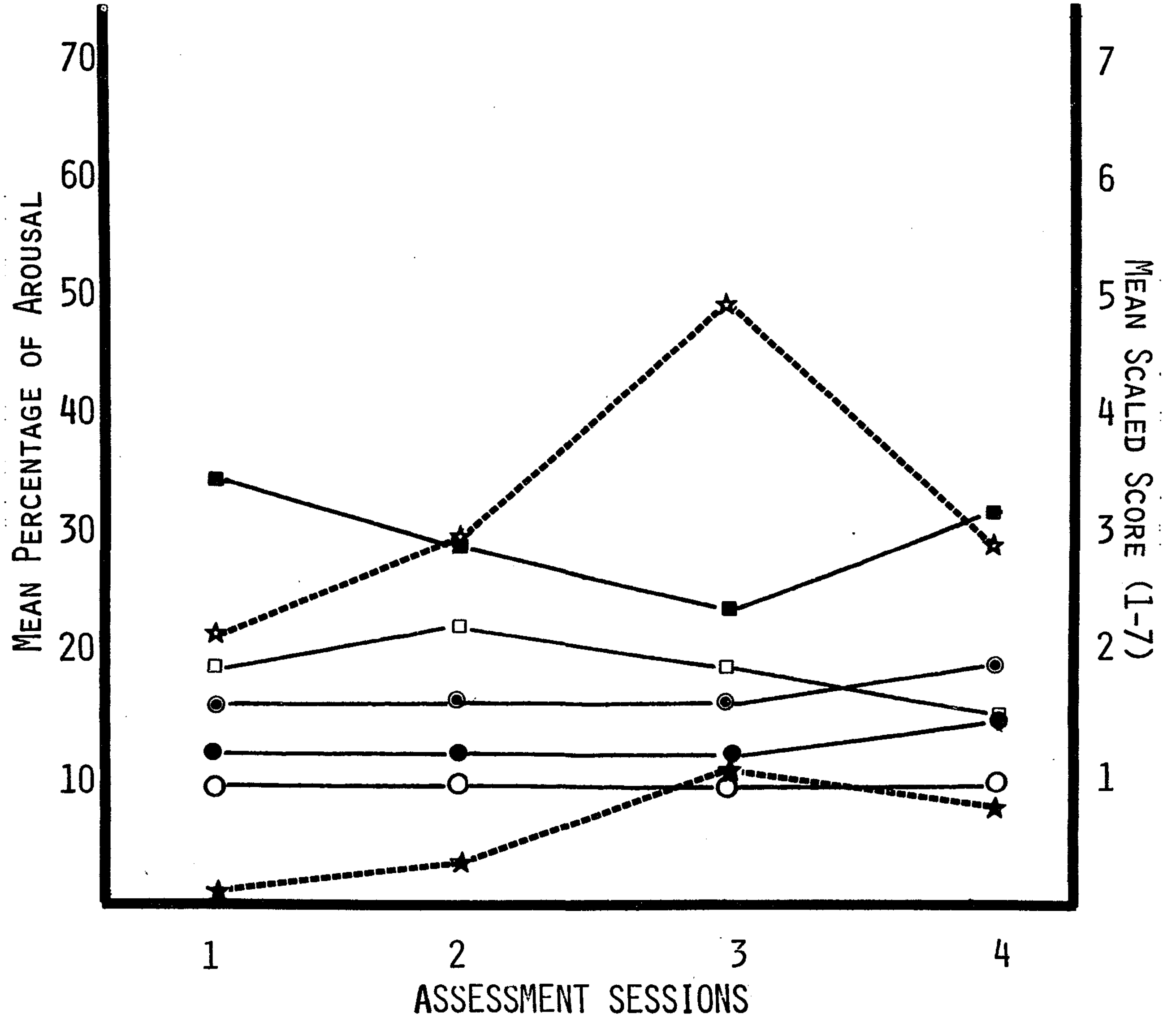
Subject 8 Public-Male



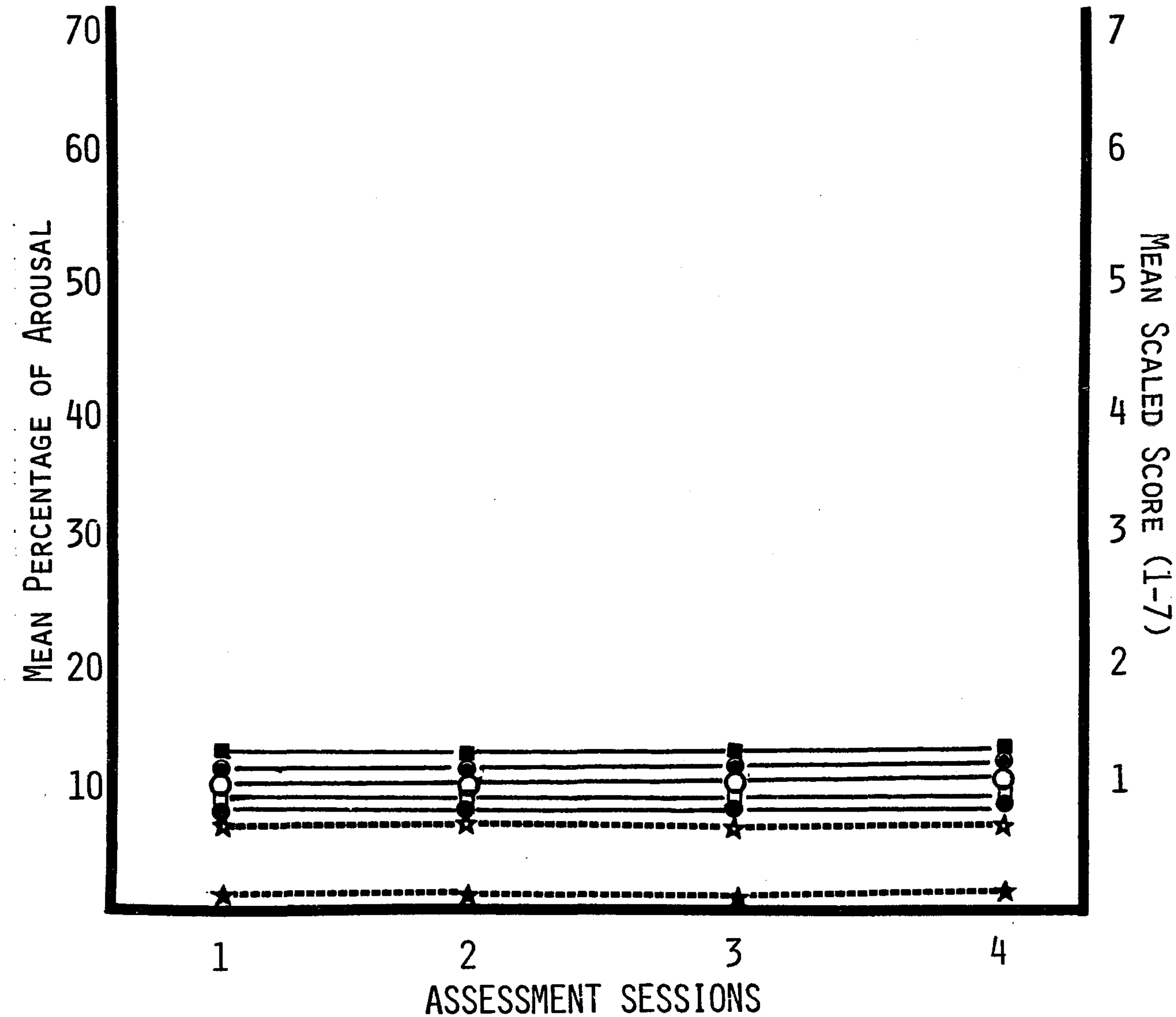
SUBJECT 9 PUBLIC-MALE



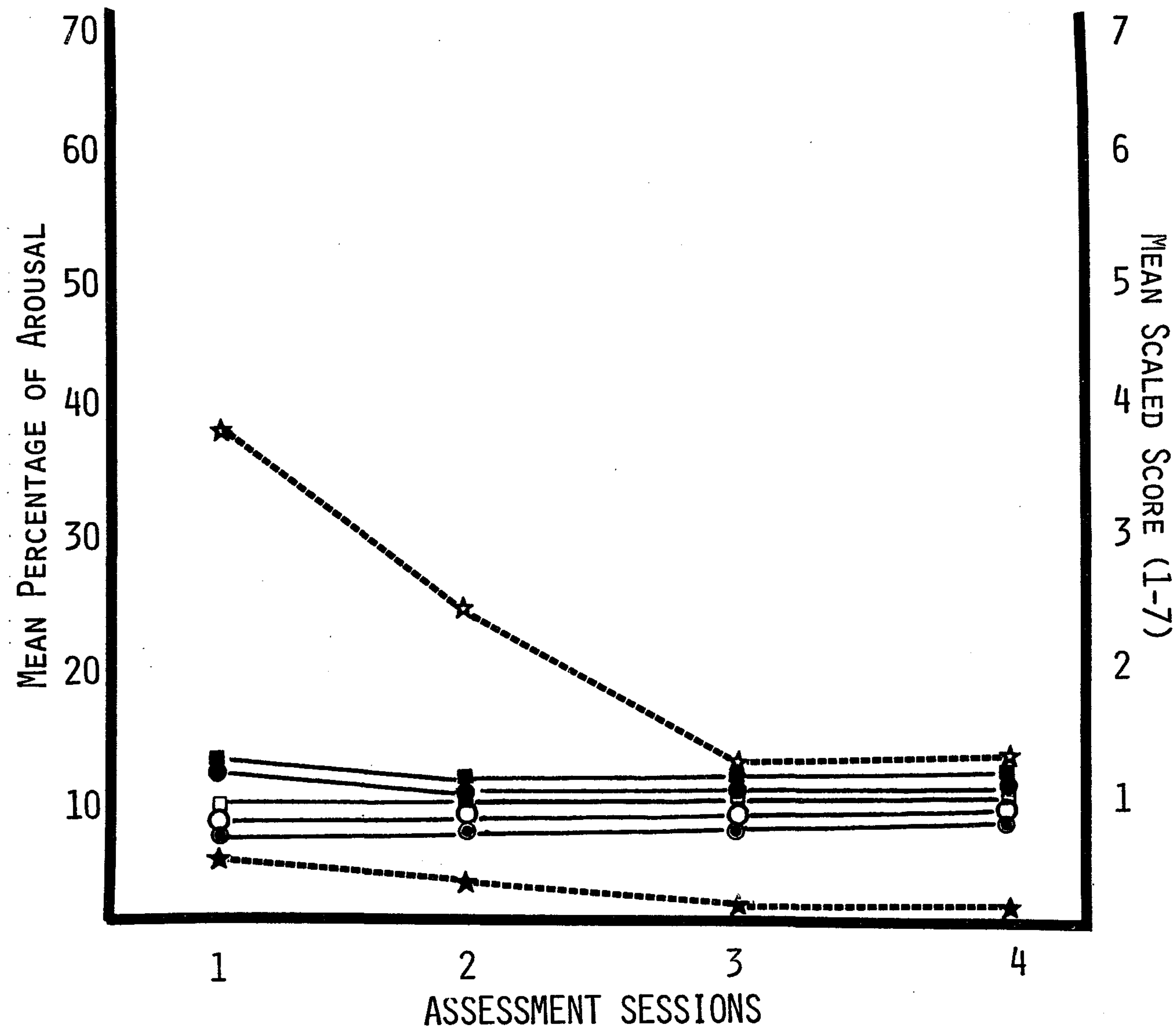
Subject 10 Public-Male



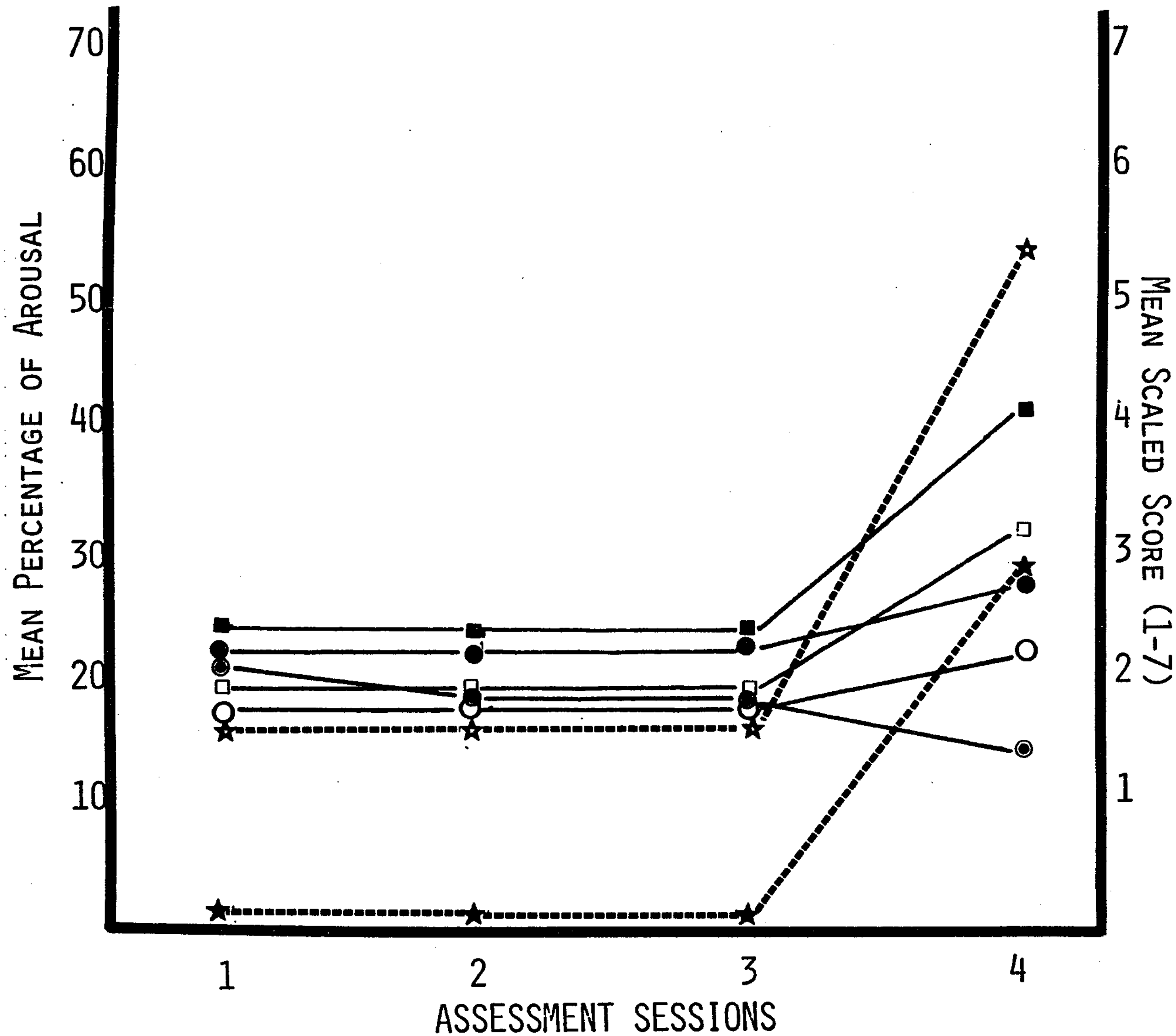
Subject 11 Private-Male



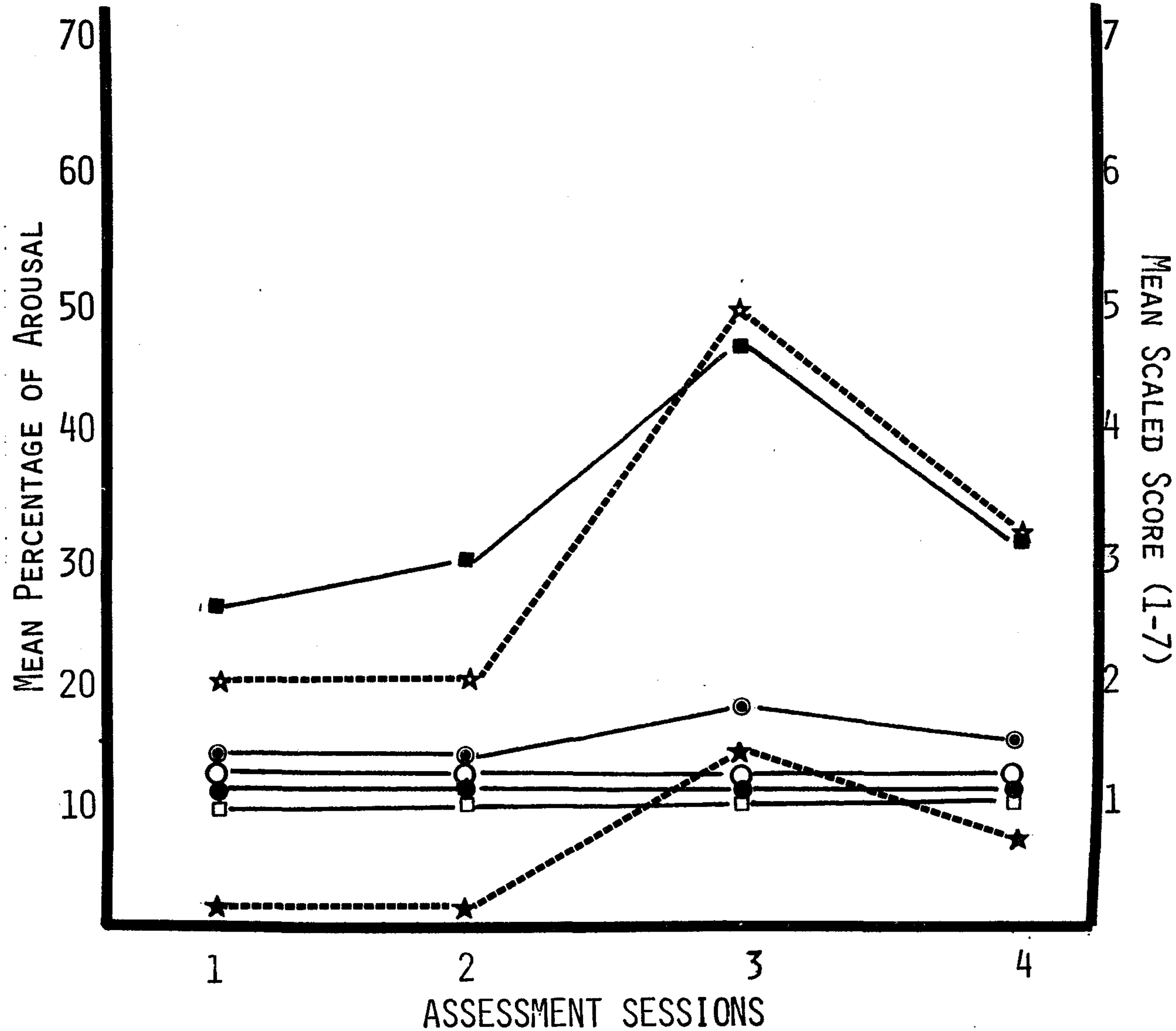
SUBJECT 12 PRIVATE-MALE



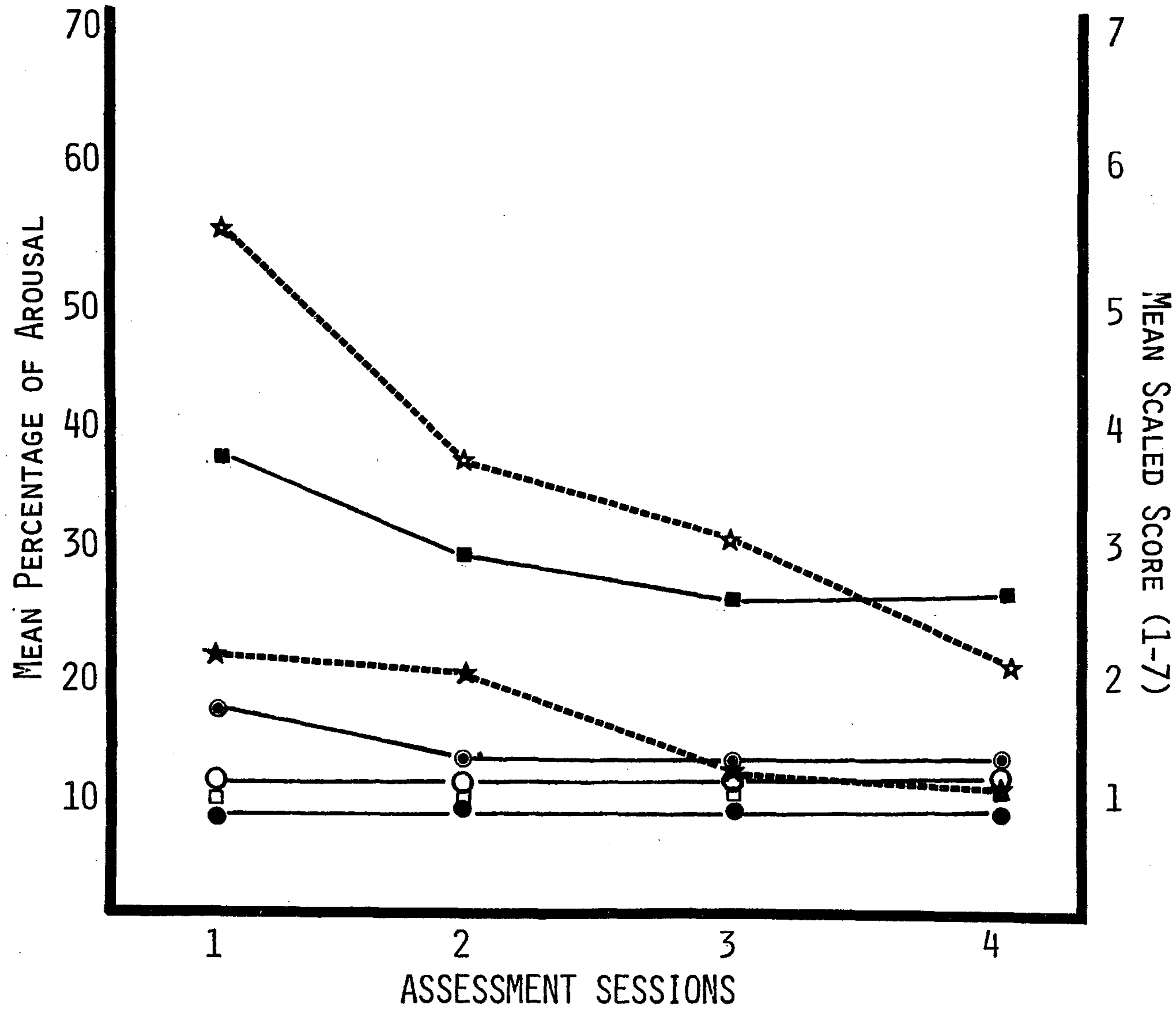
Subject 13 Private-Male



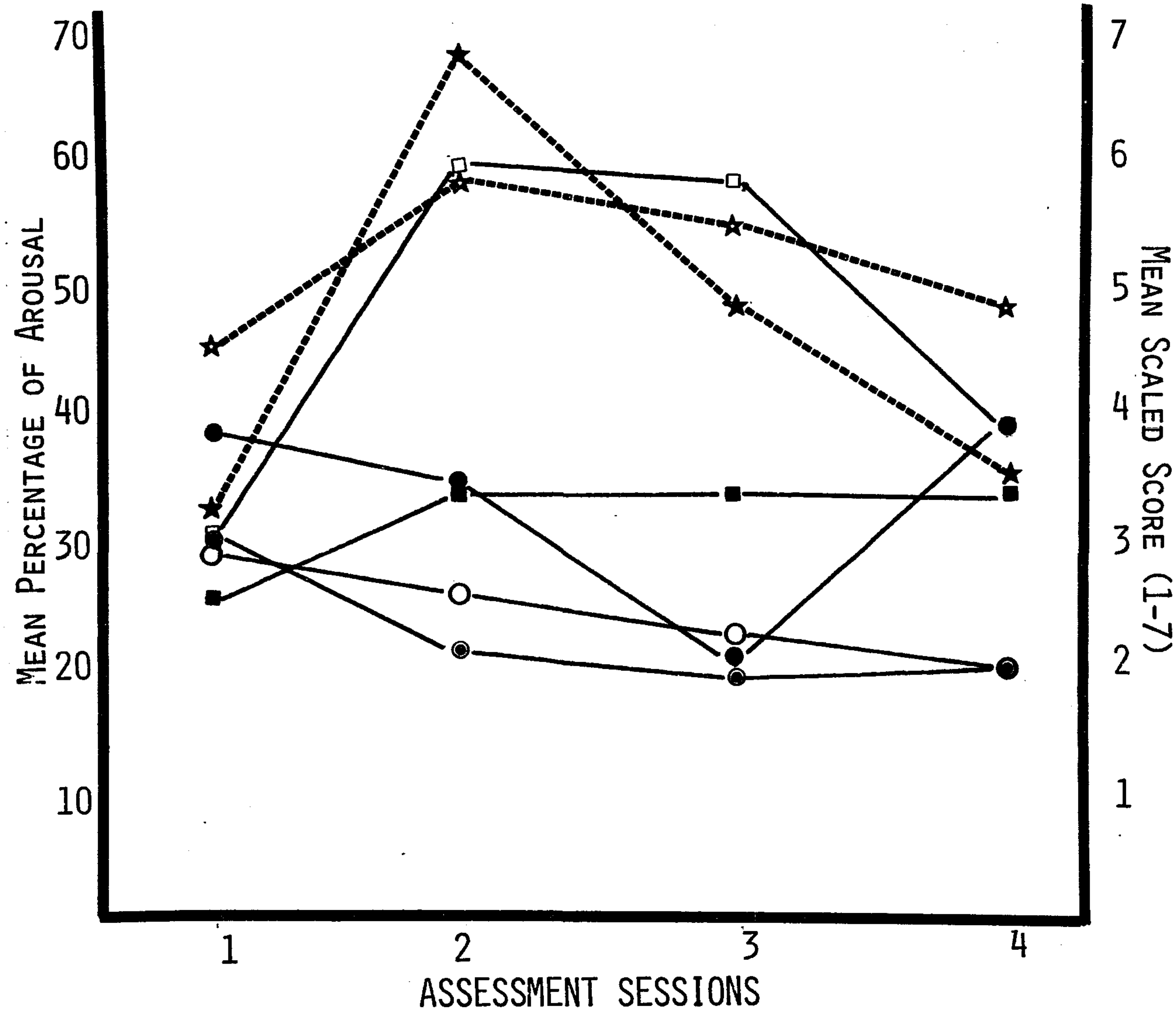
Subject 14 Private-Male



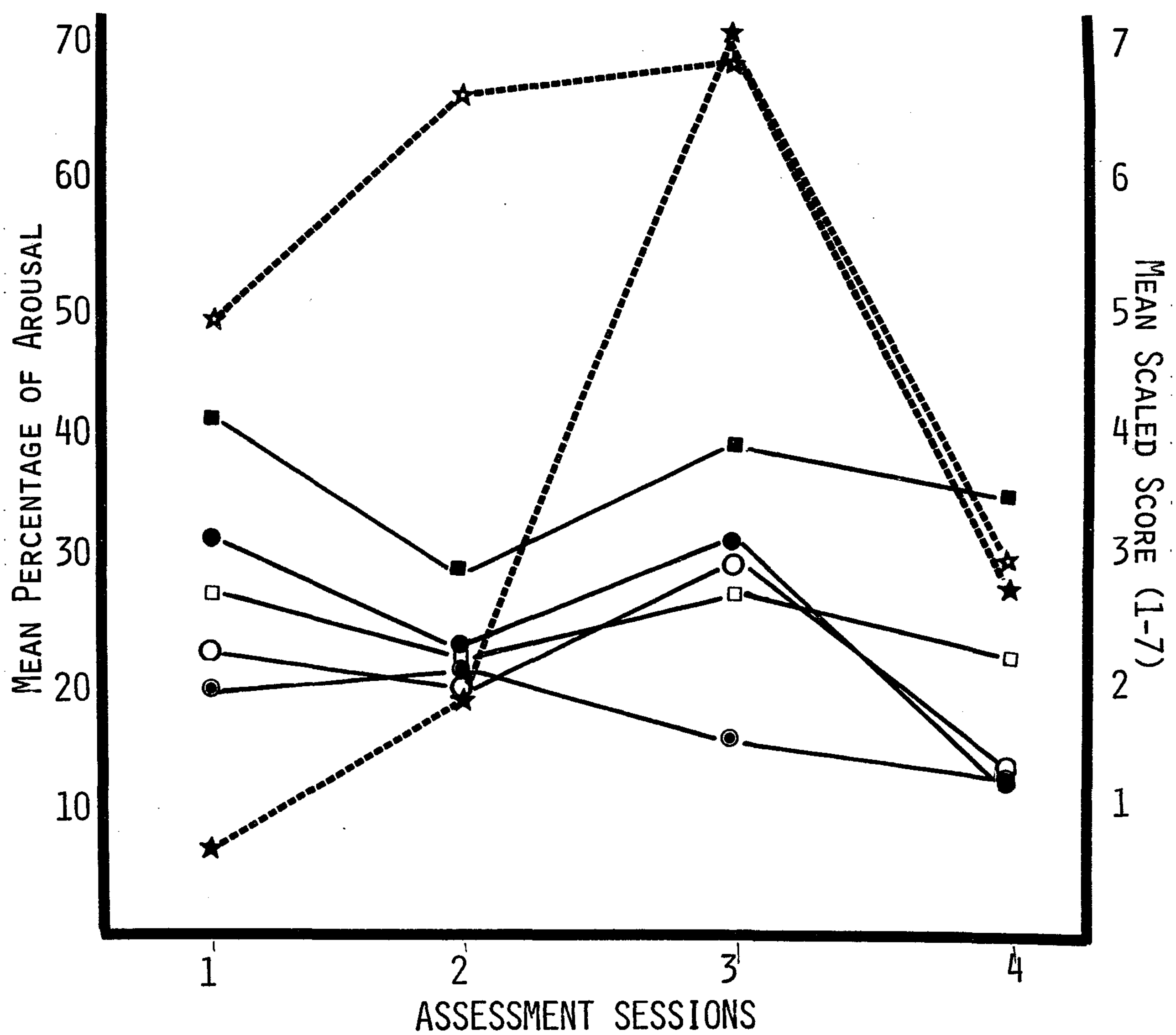
SUBJECT 15 PRIVATE-MALE



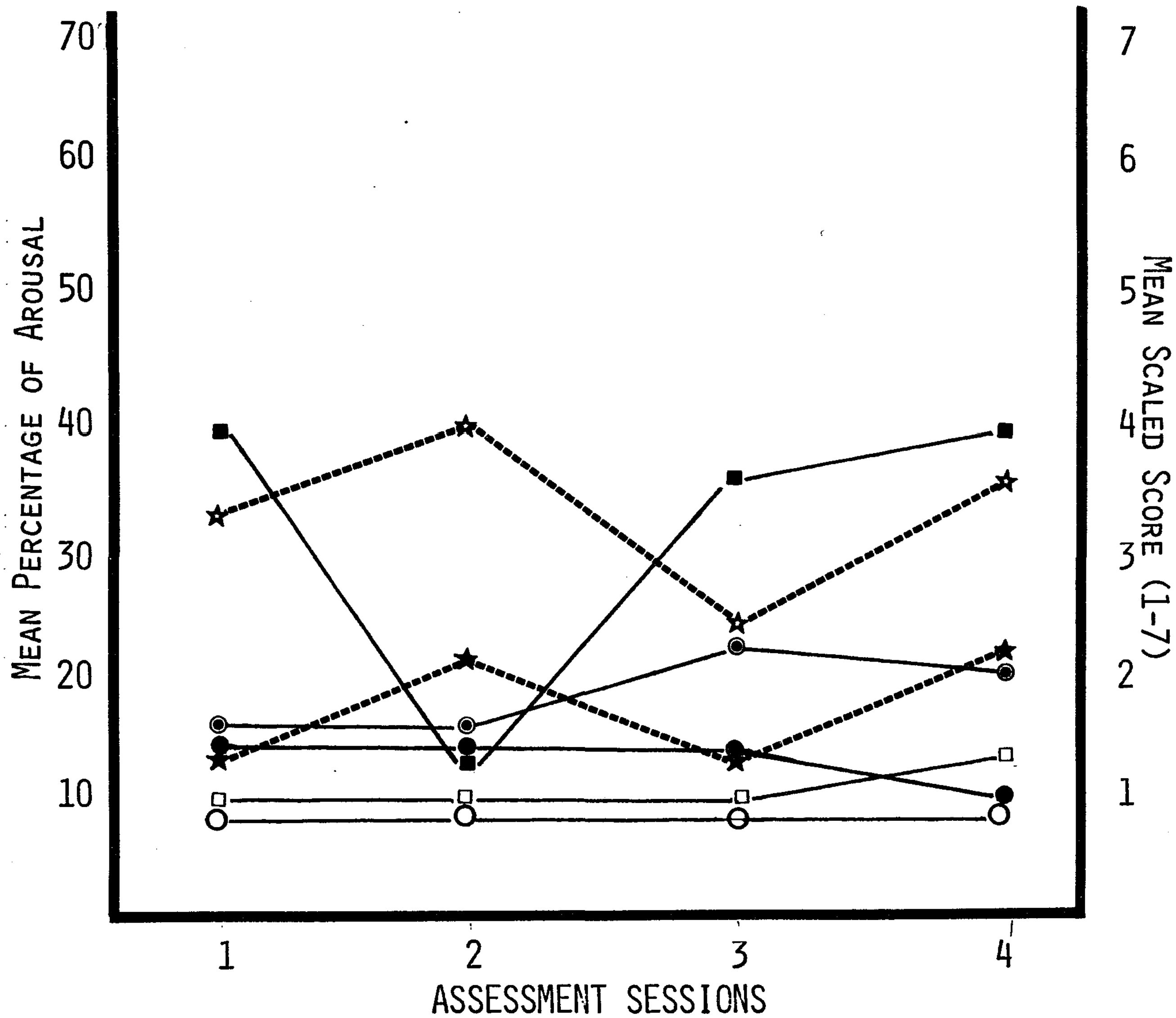
Subject 16 Private-Male



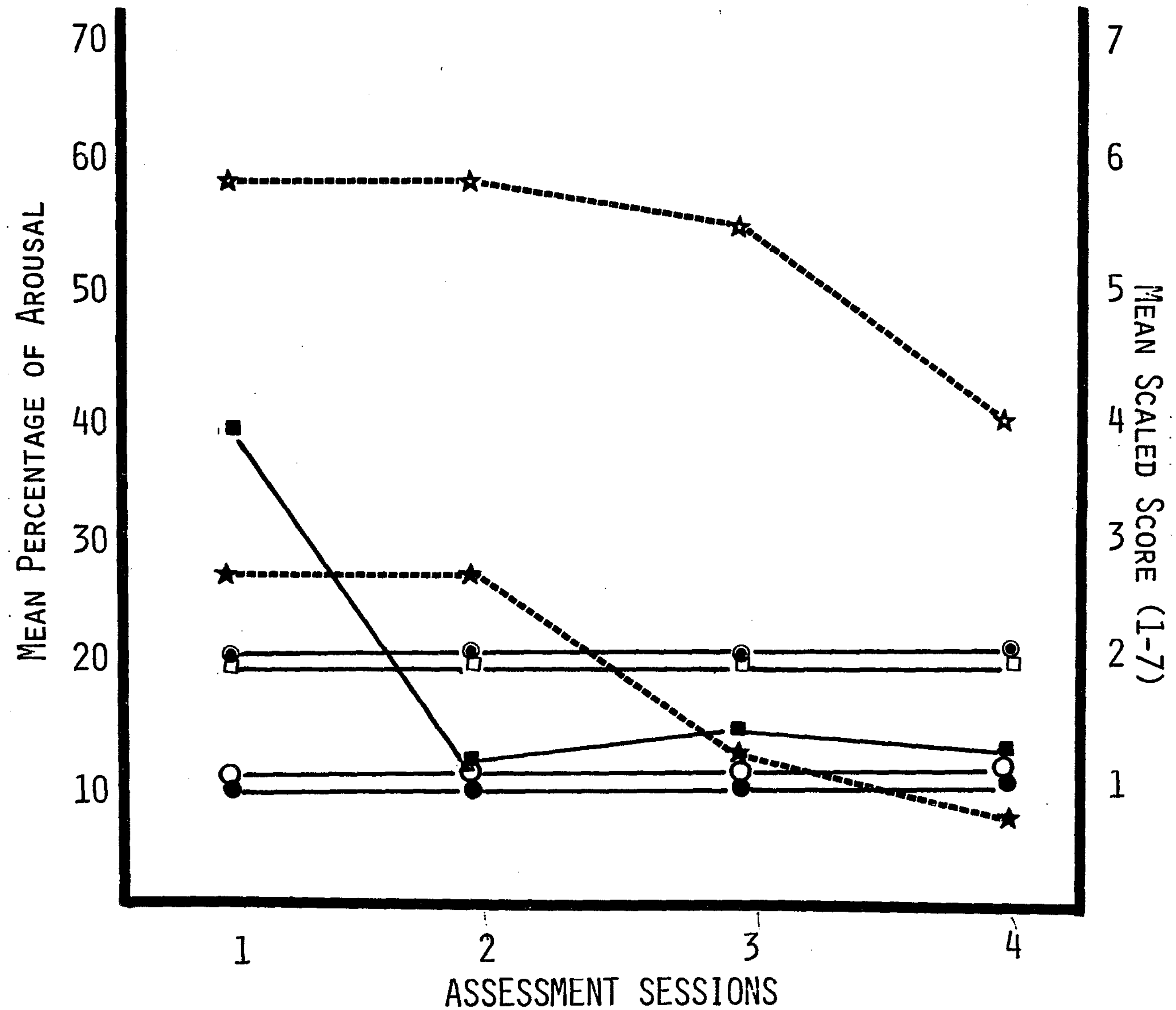
Subject 17 Private-Male



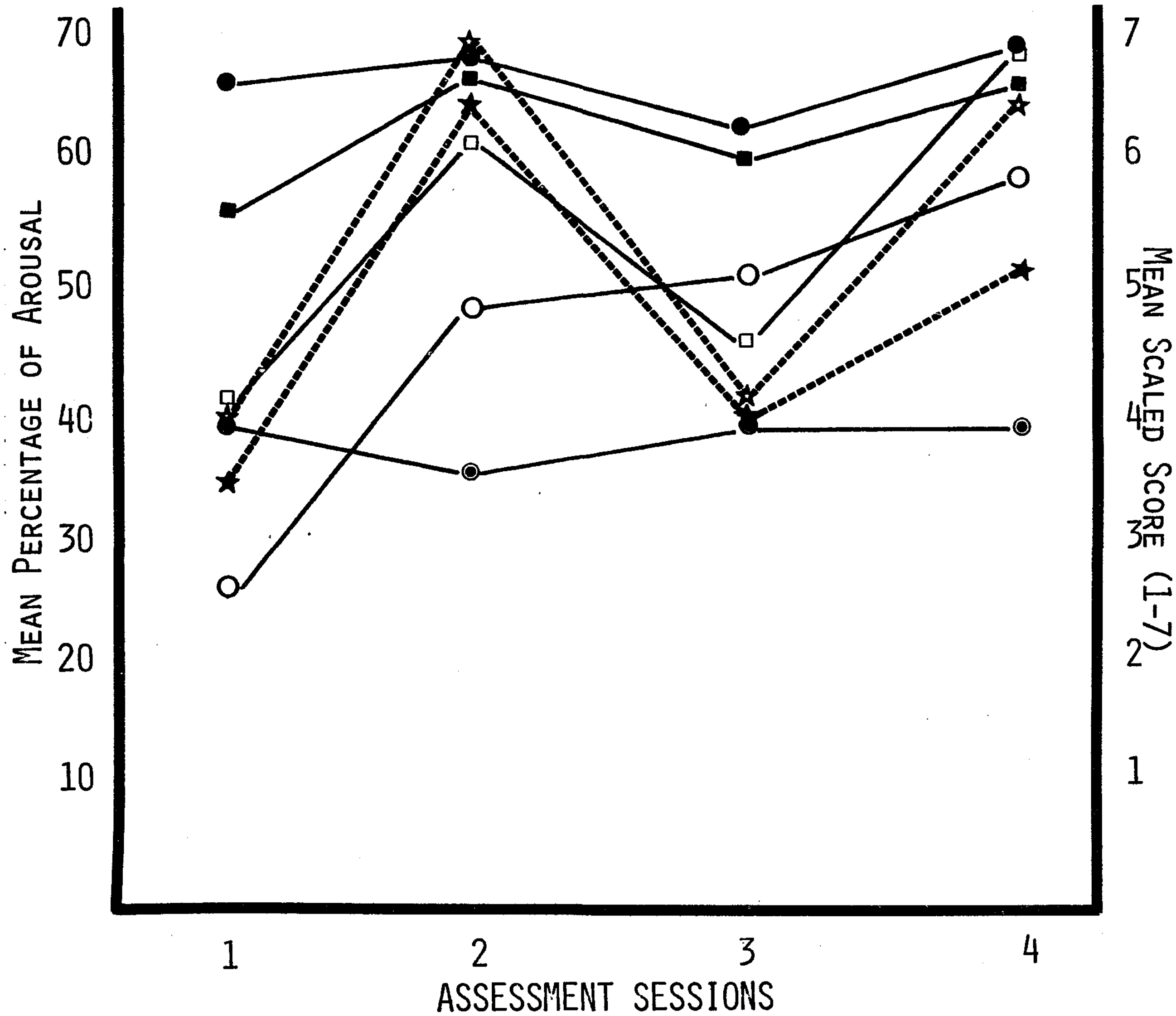
Subject 18 Private-Male



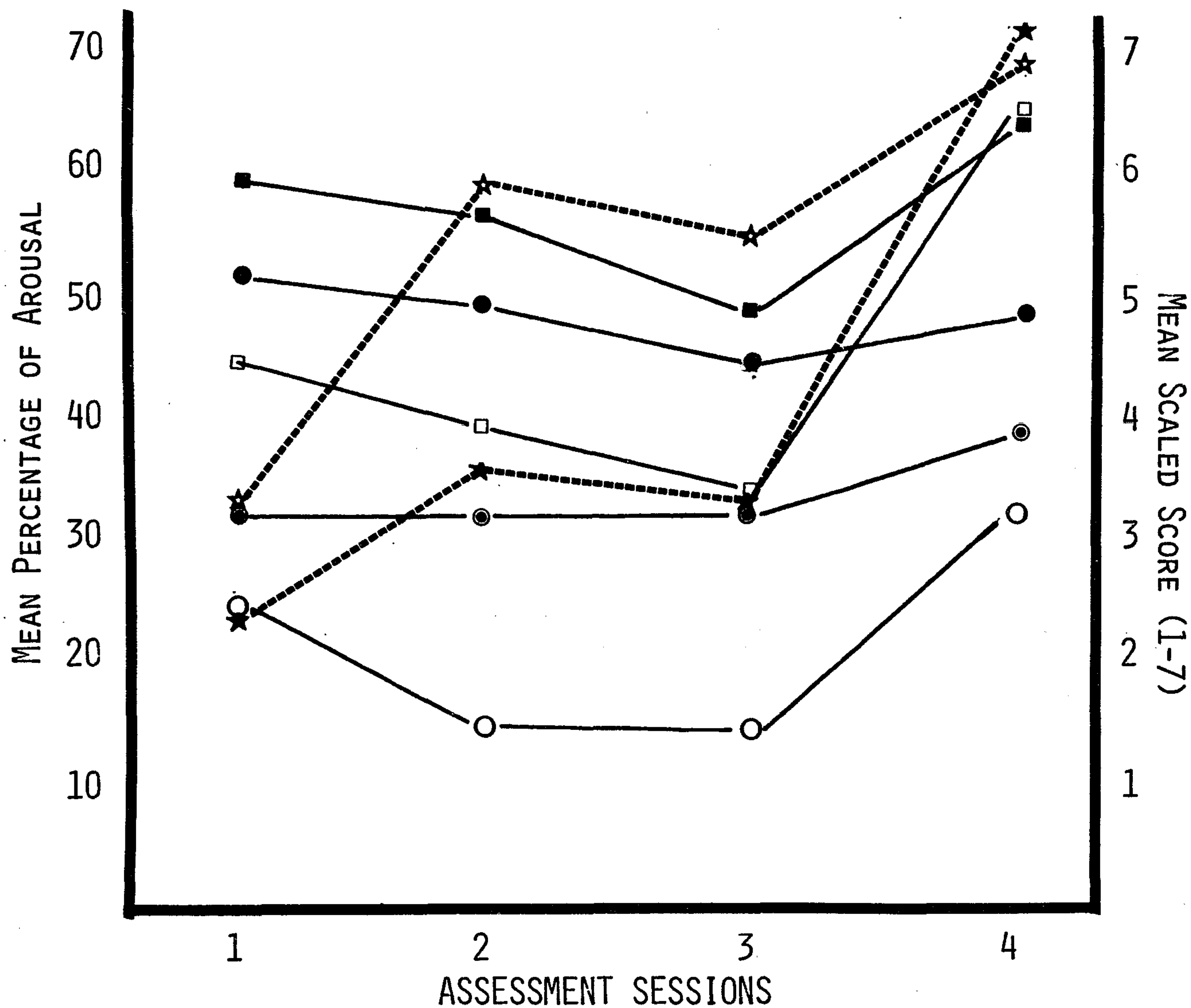
Subject 19 Private/Public-Female



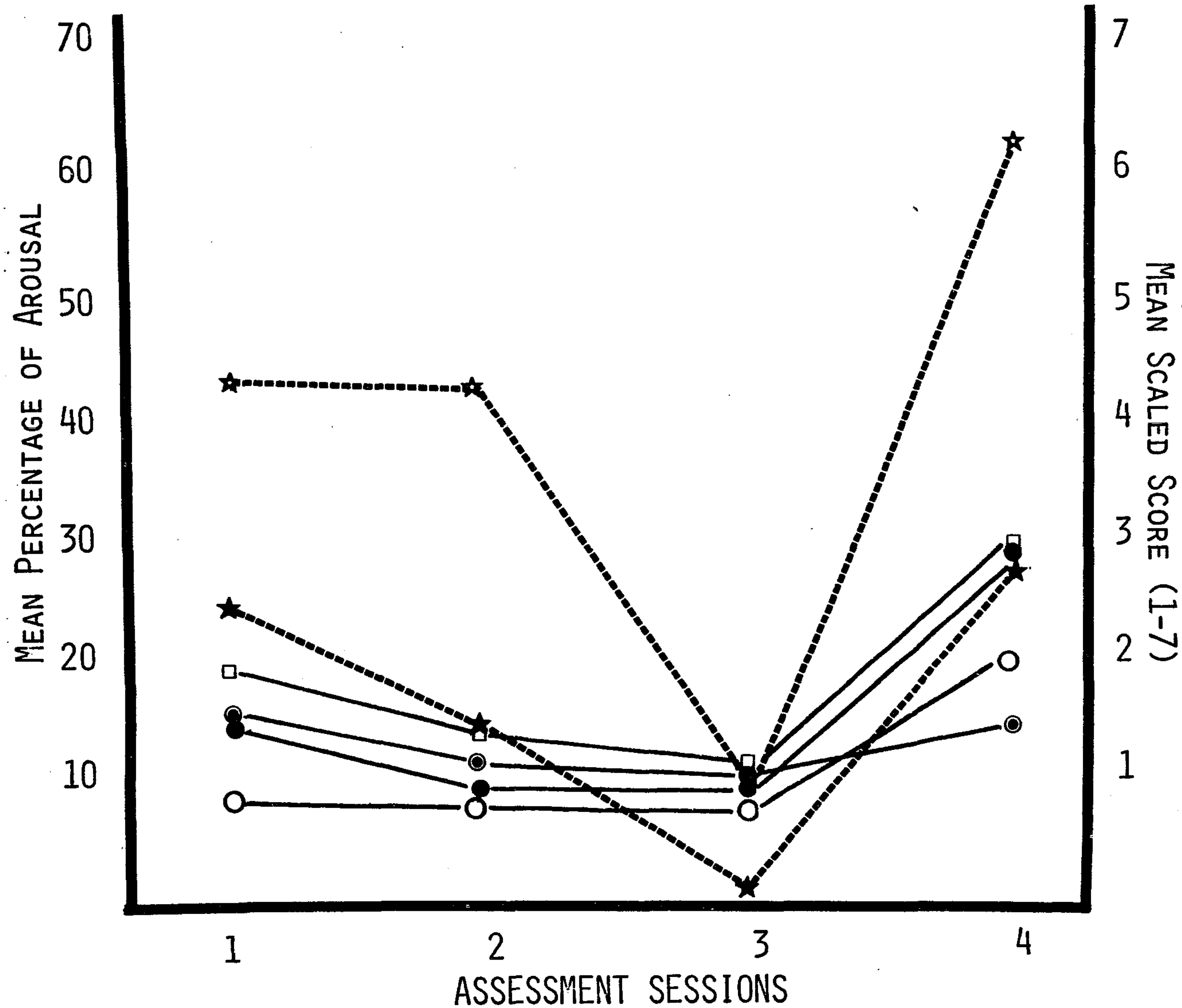
SUBJECT 20 PRIVATE-MALE



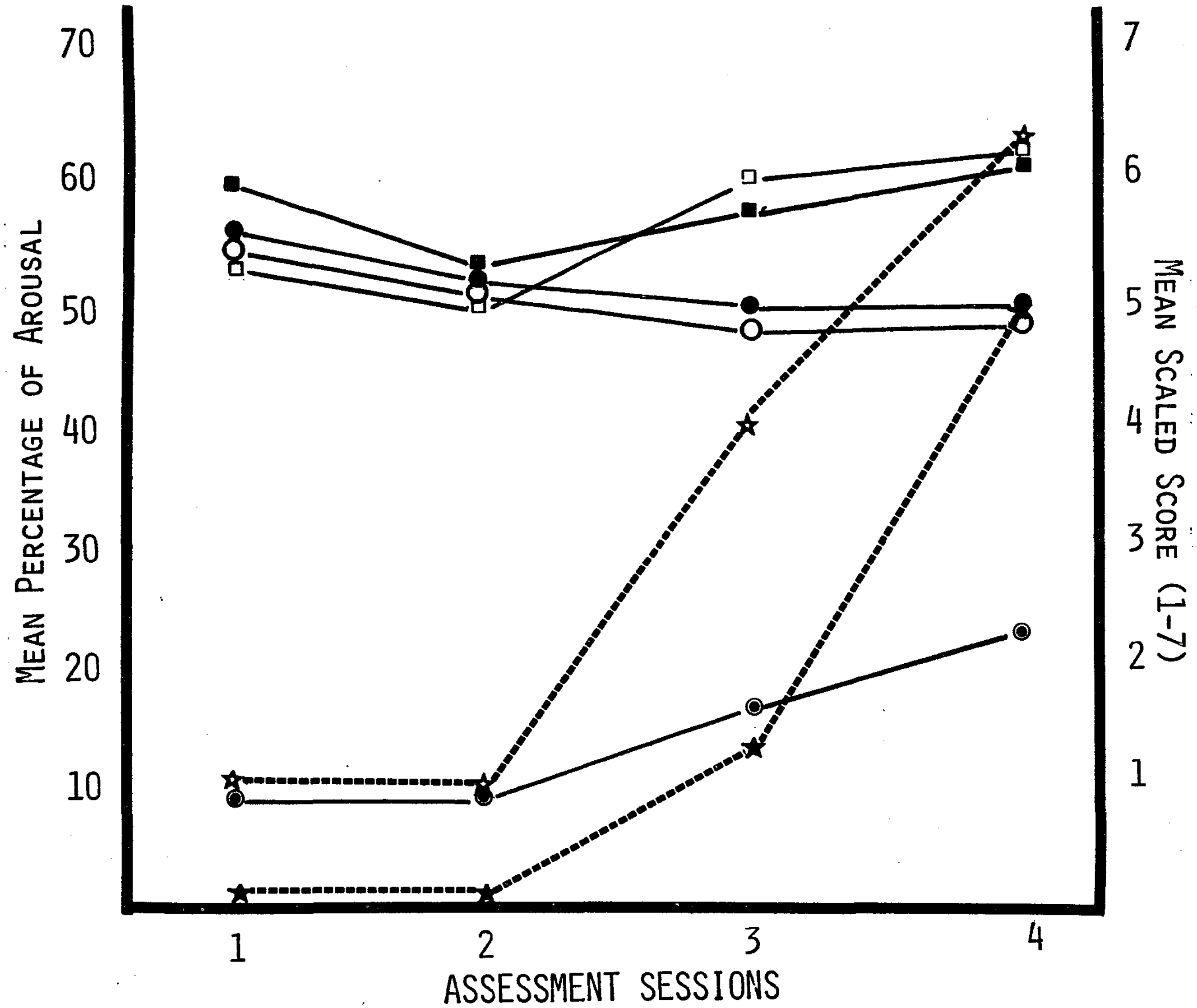
Subject 3 Public/Public-Female



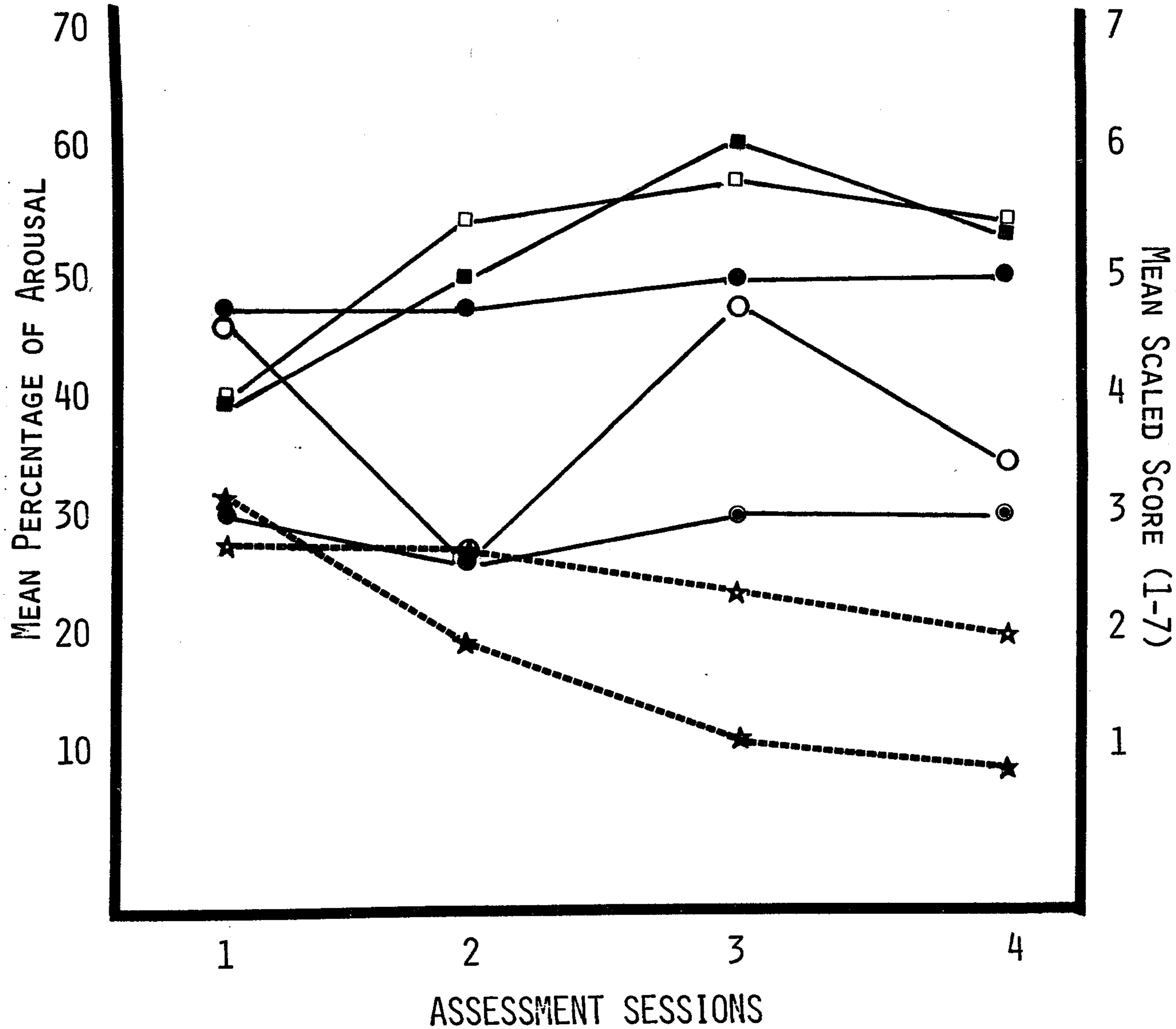
Subject 4 Public/Public-Female



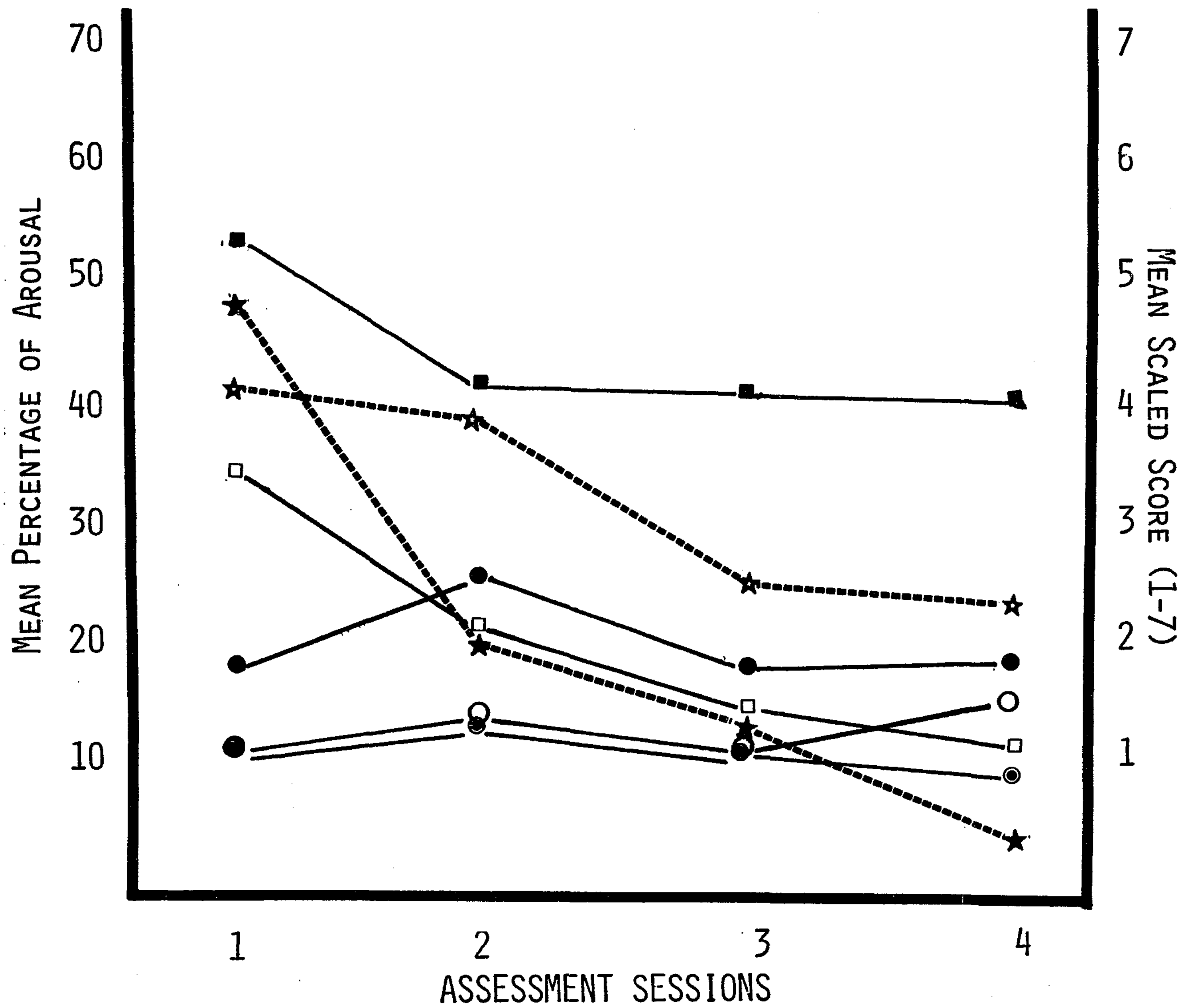
Subject 6 Public/Public-Female



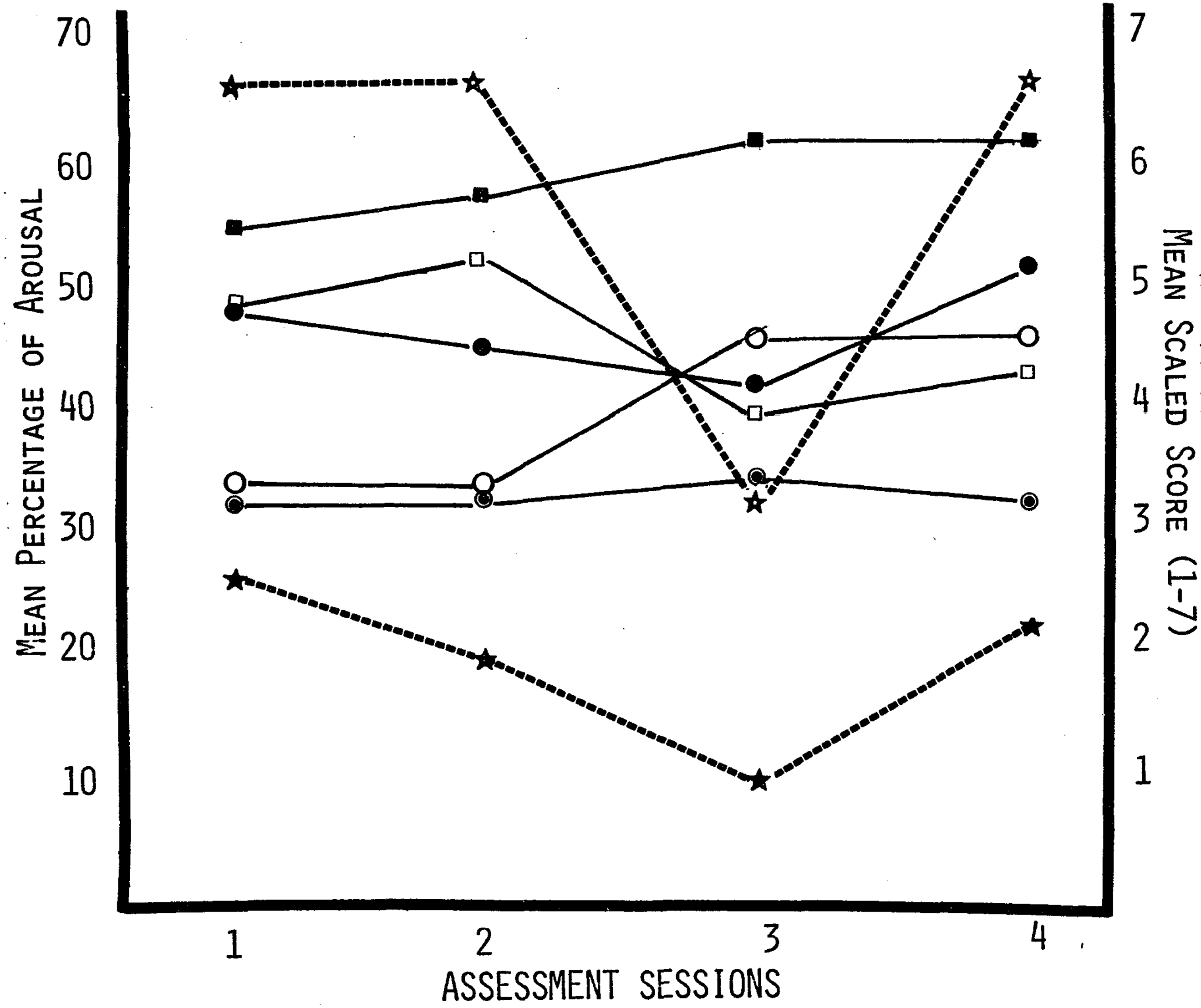
Subject 10 Public/Public-Female



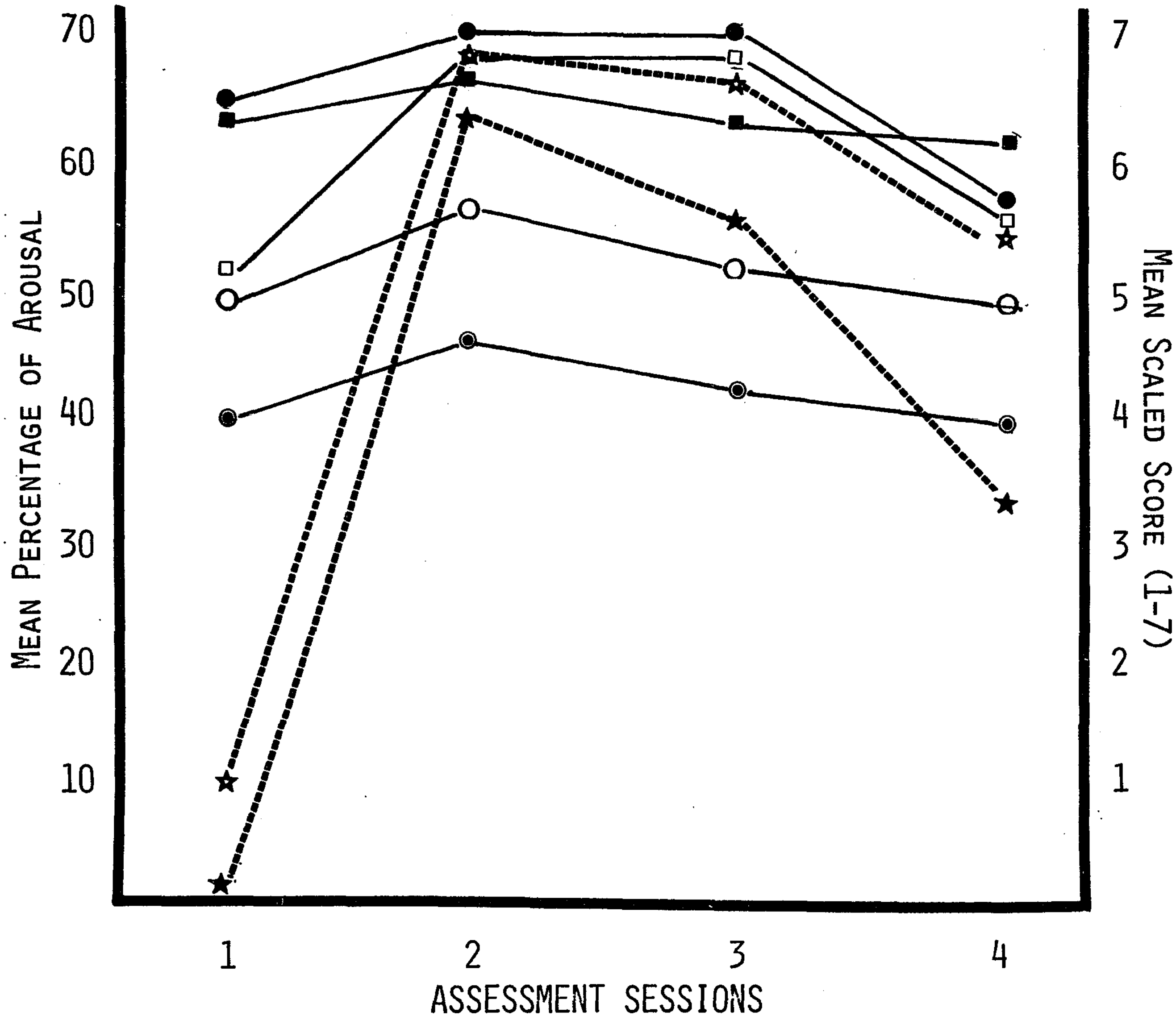
SUBJECT 11 PRIVATE/PUBLIC-FEMALE



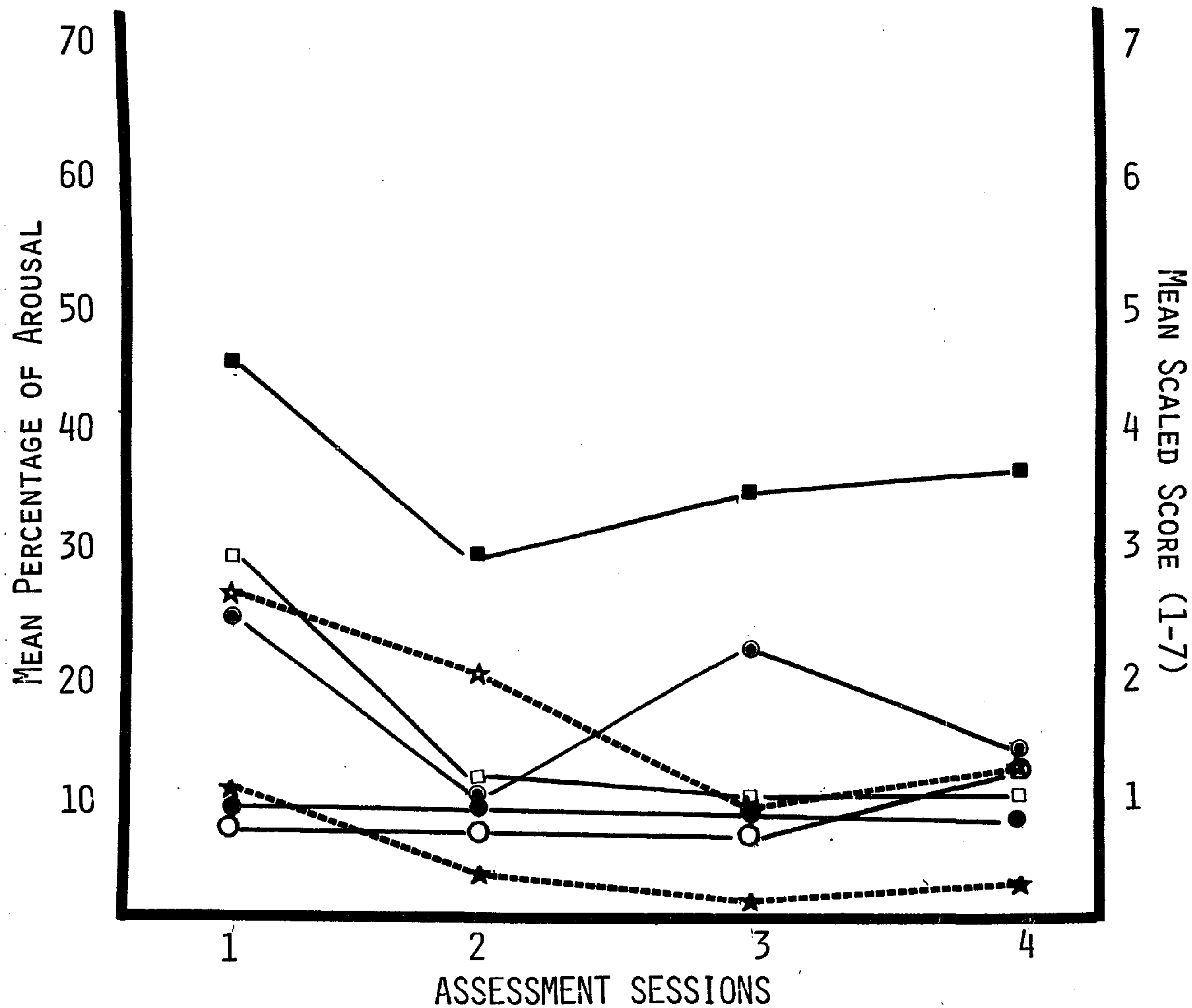
SUBJECT 12 PRIVATE/PUBLIC-FEMALE



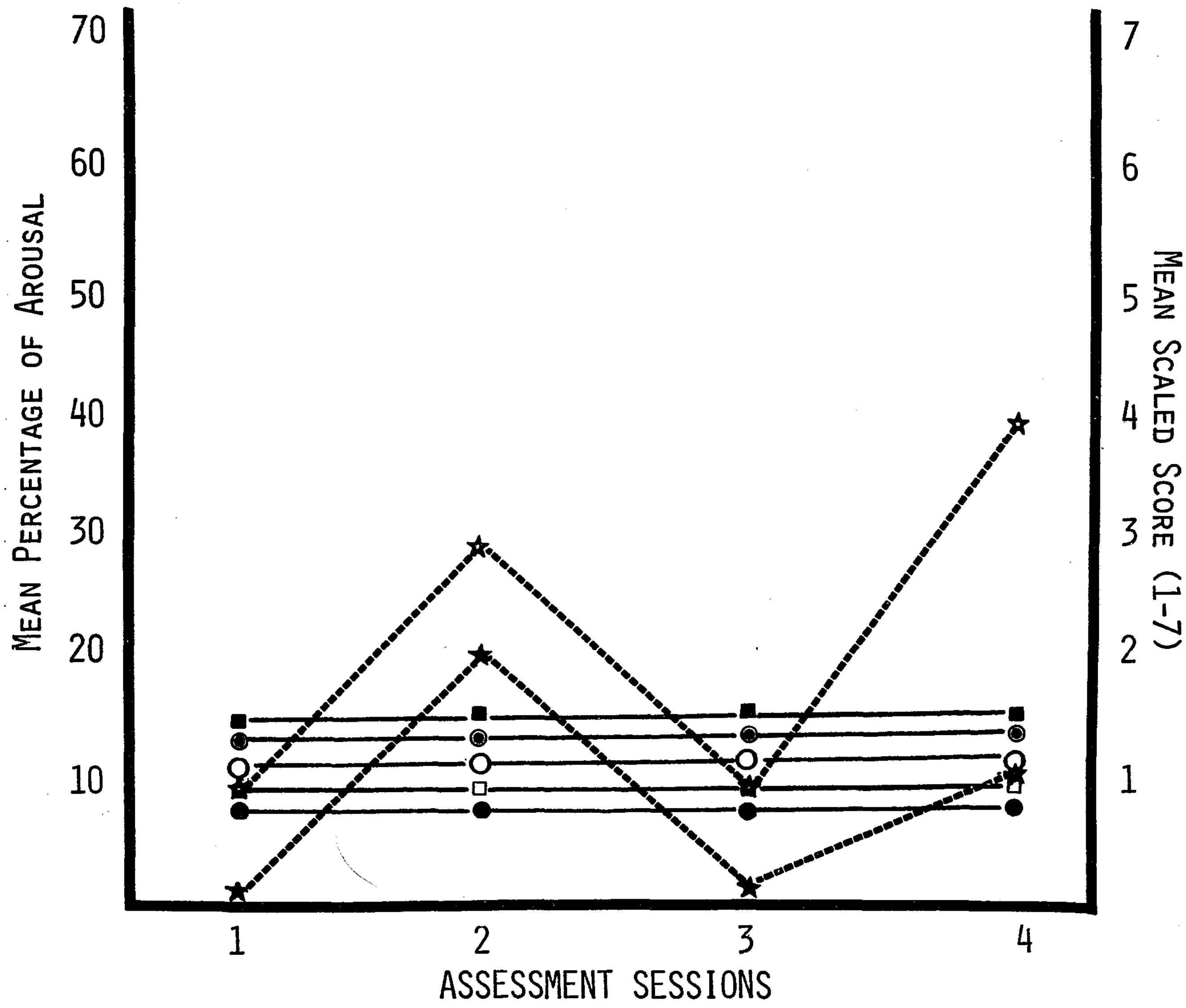
Subject 16 Private/Public-Female



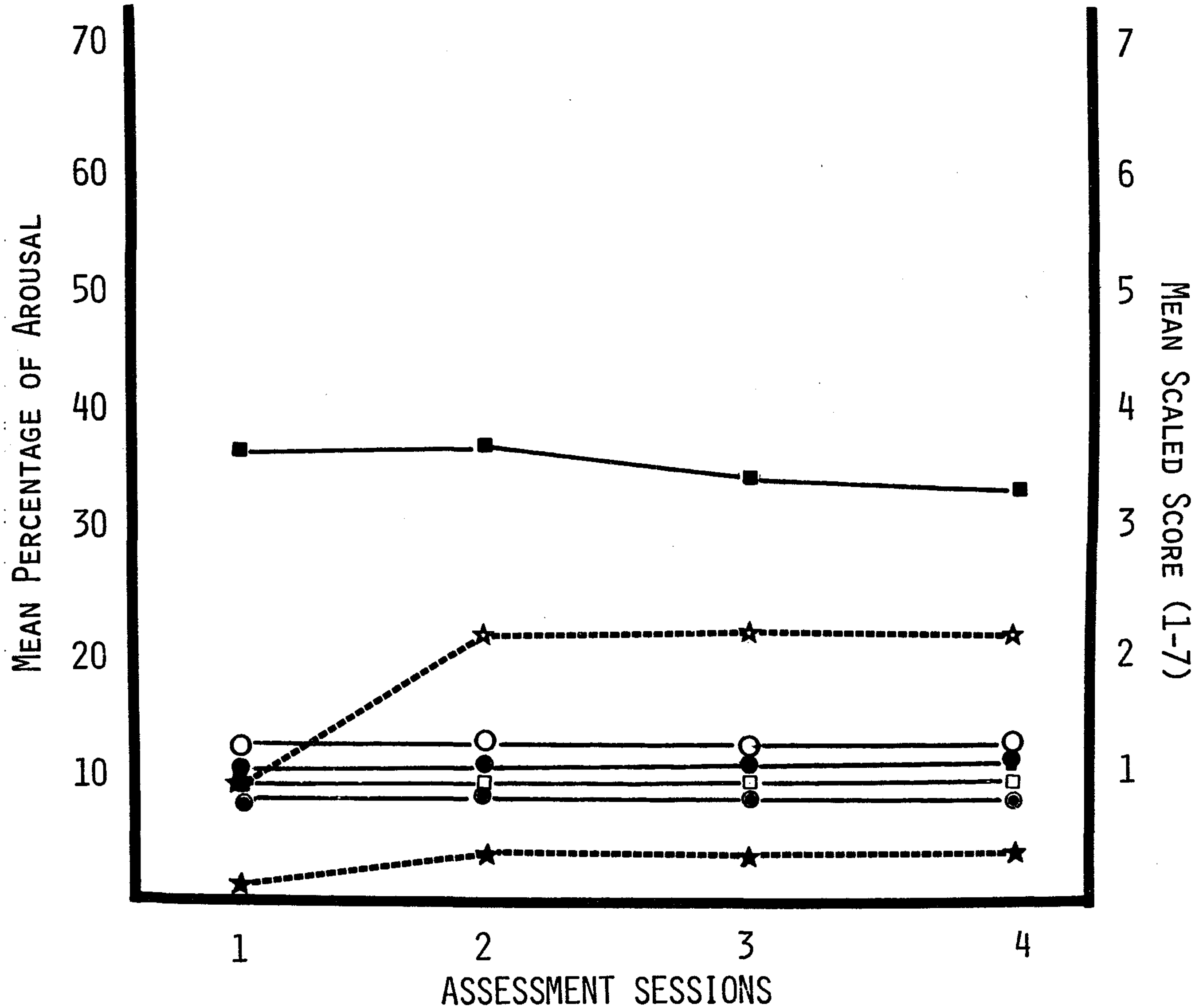
Subject 17 Private/Public-Female



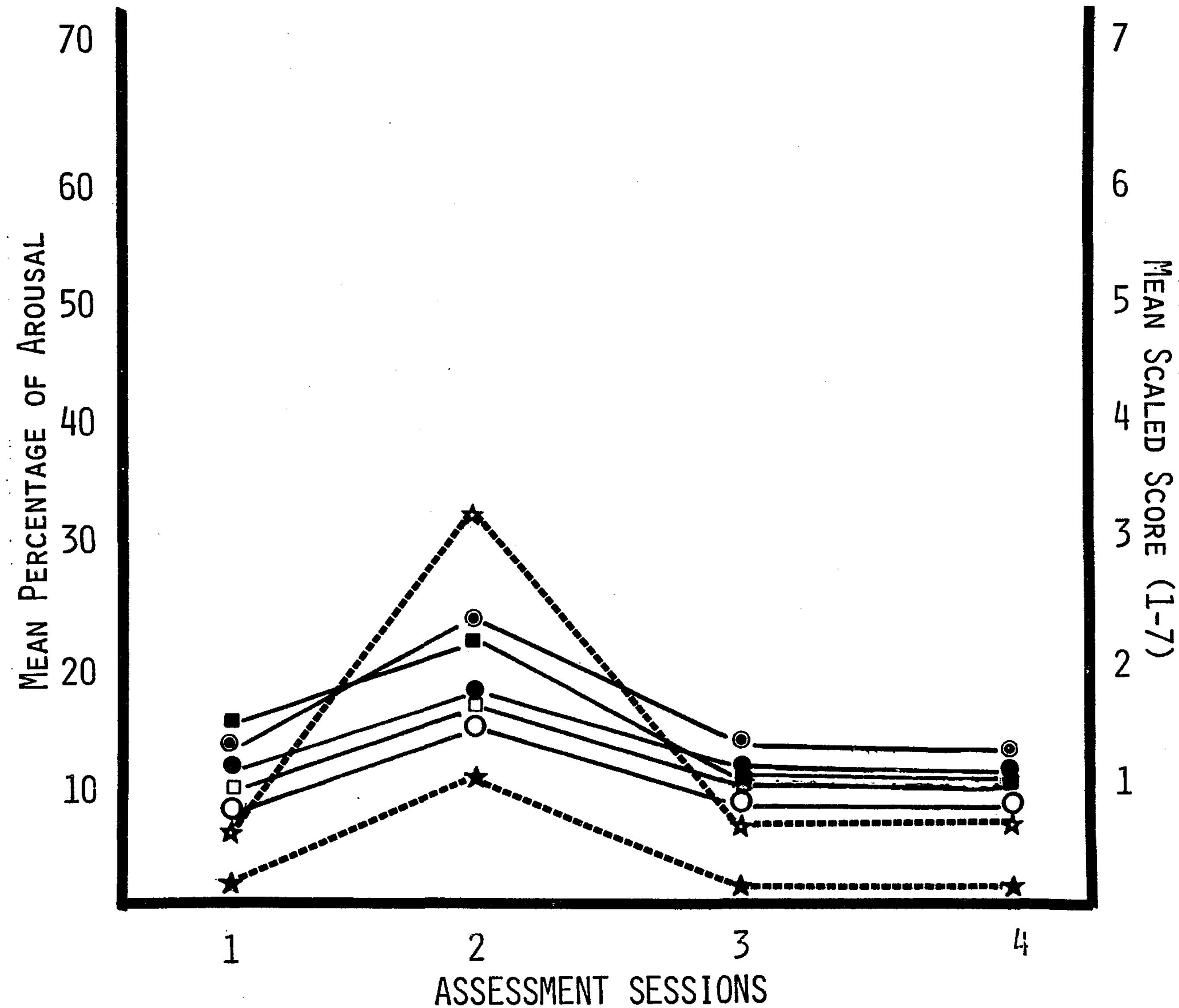
Subject 3 Public/Public-Male



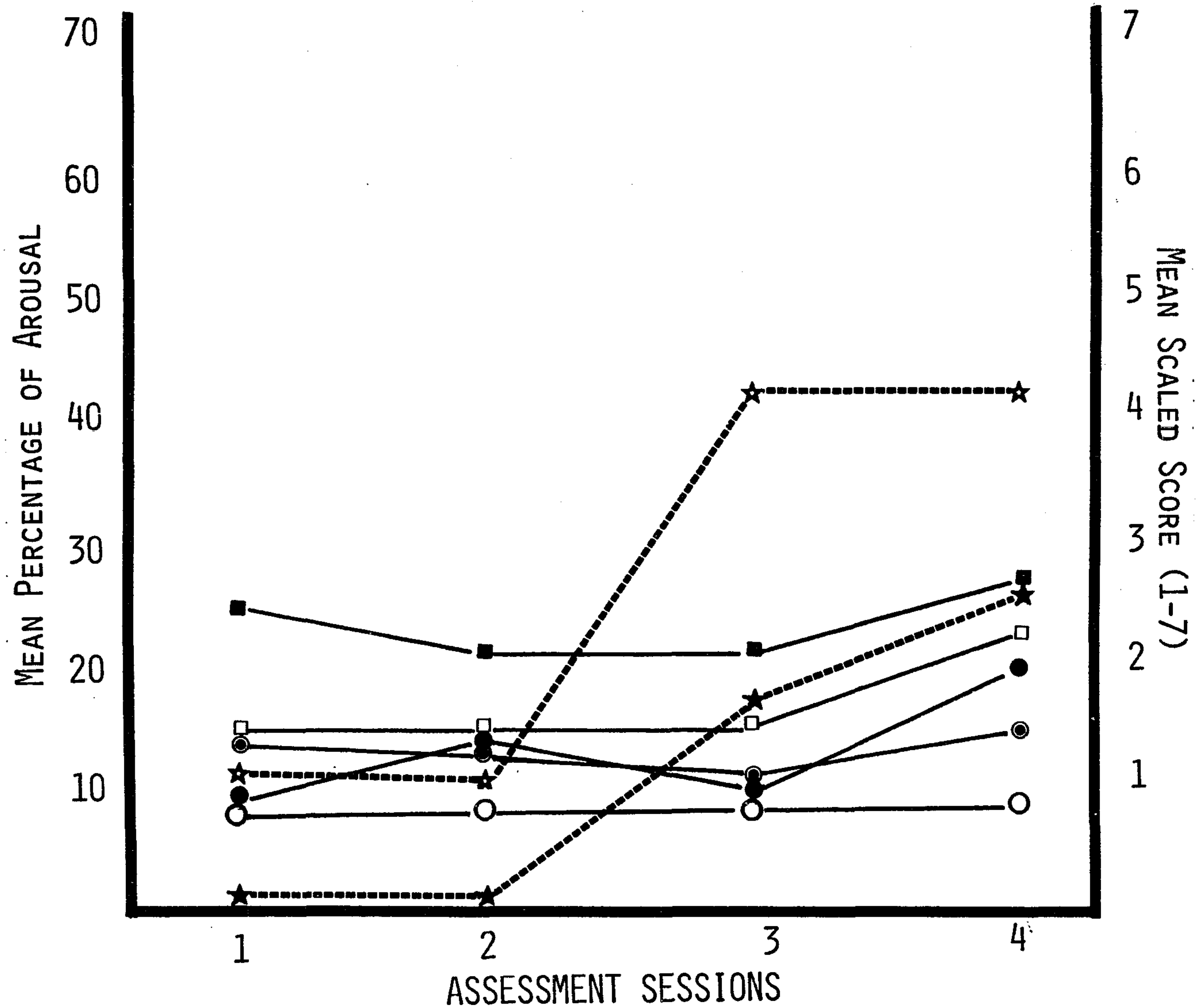
Subject 4 Public/Public-Male



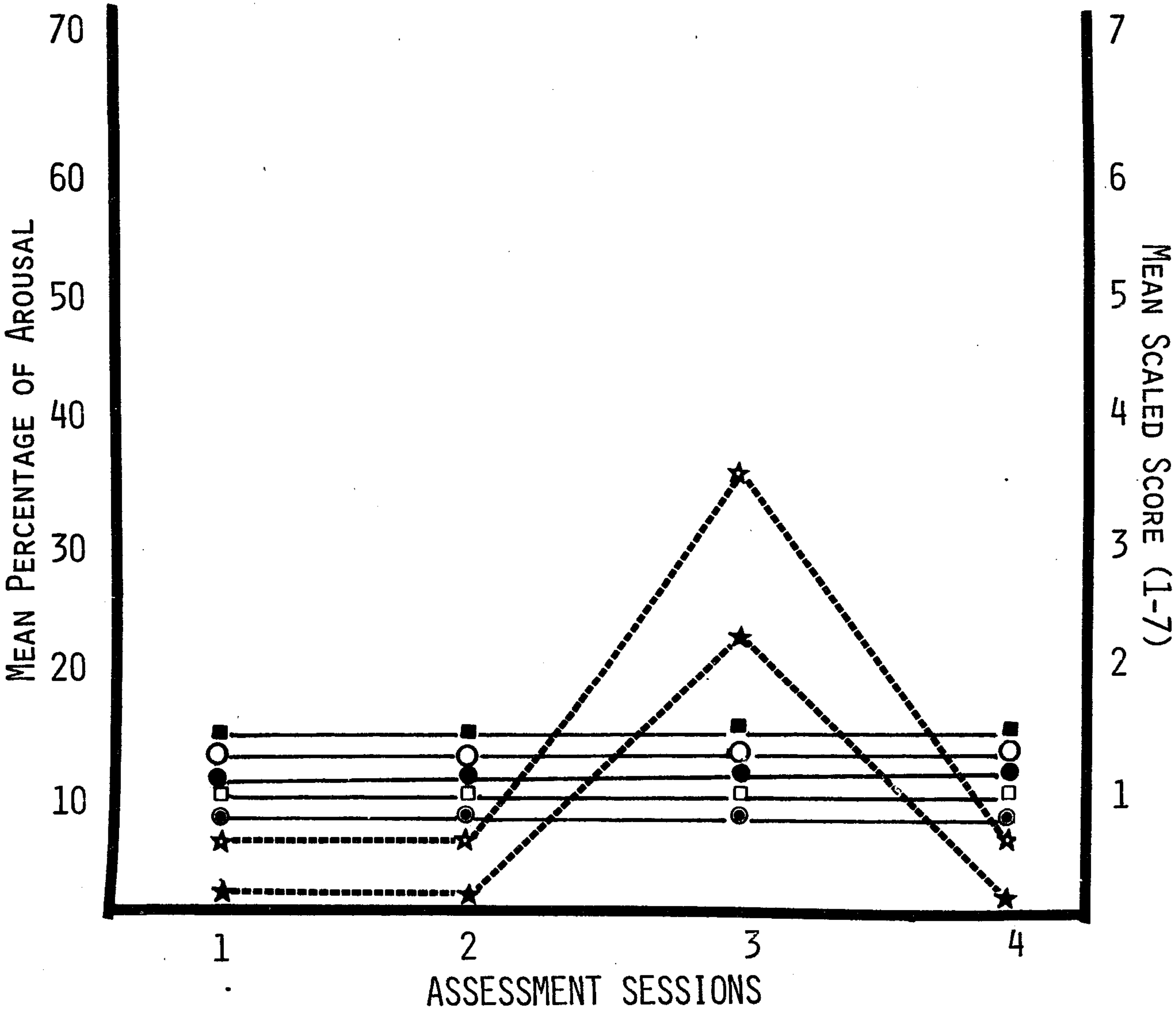
Subject 6 Public/Public-Male



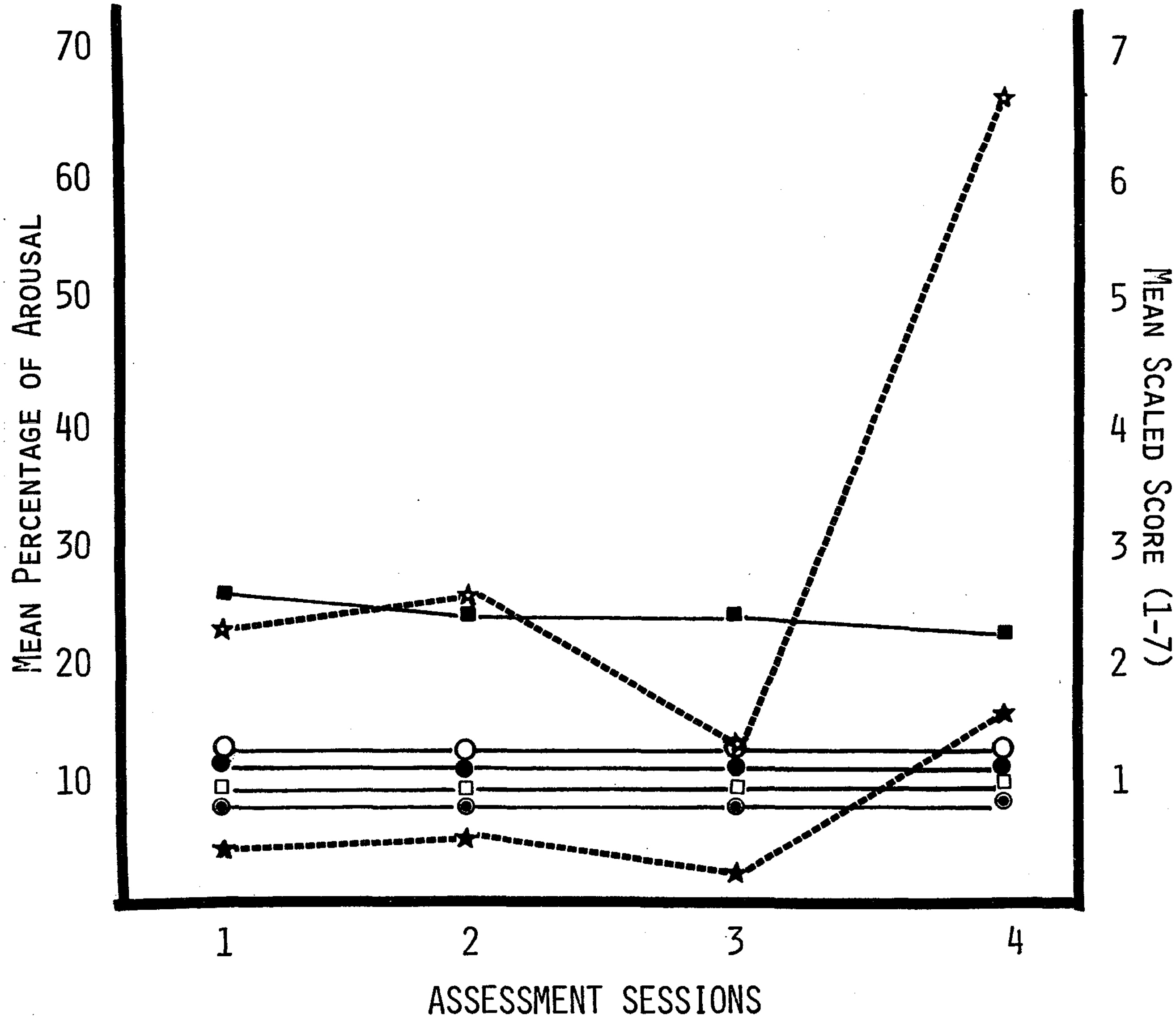
SUBJECT 10 PUBLIC/PUBLIC-MALE



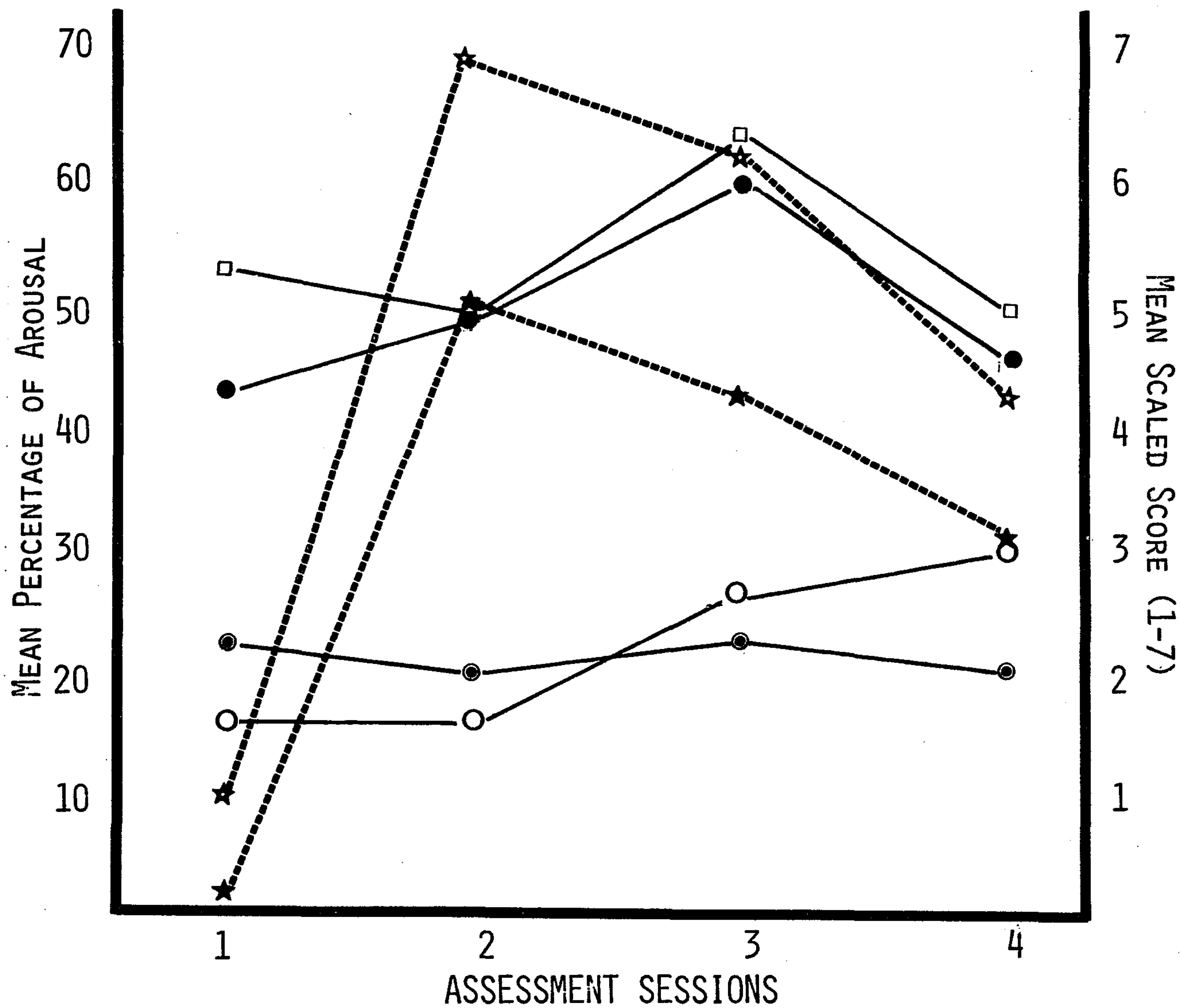
Subject 11 Private/Public-Male



Subject 12 Private/Public-Male



Subject 16 Private/Public-Male



SUBJECT 17 PRIVATE/PUBLIC-MALE

Appendix E-6

The Code for each Dependent Measure

(Within-Subject)

	Female	Male
Subject 1		
Amount	2-1-2-1	2-1-2-1
Latency to arousal	2-1-2-1	2-1-2-1
Subjective Units	2-1-2-1	1-1-1-1
Predicted Amount	2-1-2-1	1-1-1-1
Predicted Time Arousal	2-1-2-1	1-1-1-1
Predicted Time Viewing	2-1-2-1	2-1-1-1
Attraction Level	2-1-2-1	2-1-1-1
Subject 2		
Amount	1-2-1-1	1-1-1-1
Latency to Arousal	1-2-1-1	1-1-1-1
Subjective Units	1-2-1-1	1-2-1-1
Predicted Amount	1-2-1-1	2-1-1-1
Predicted Time Arousal	1-2-1-1	1-1-1-1
Predicted Time Viewing	1-2-1-2	2-1-1-1
Attraction Level	1-2-1-1	1-2-1-1
Subject 3		
Amount	1-2-1-2	2-1-1-2
Latency	1-2-1-2	2-1-1-2
Subjective Units	1-2-1-2	2-1-1-1
Predicted Amount	1-2-1-2	1-1-1-1
Predicted Time Arousal	1-2-1-2	1-1-1-2
Predicted Time Viewing	1-1-1-2	2-1-2-1
Attraction Level	1-2-1-2	2-1-2-2
Subject 4		
Amount	1-2-1-2	2-2-1-2
Latency to Arousal	1-2-1-2	1-2-1-2
Subjective Units	1-2-1-2	1-1-1-1
Predicted Amount	1-2-1-2	1-1-1-1
Predicted Time Arousal	1-2-1-2	2-1-2-1
Predicted Time Viewing	1-2-1-2	2-1-1-1
Attraction Level	2-1-2-2	1-2-2-2
Subject 5		
Amount	2-1-2-1	2-1-1-2
Latency	2-1-2-1	2-1-1-2
Subjective Units	2-1-2-1	1-1-1-1
Predicted Amount	2-1-2-1	1-1-1-1
Predicted Time Arousal	2-1-2-1	1-1-1-1
Predicted Time Viewing	2-1-2-1	1-2-1-2
Attraction Level	2-1-2-1	1-2-1-2

Appendix E-6

(Continued)

	Female	Male
Subject 6		
Amount	1-2-1-1	2-2-1-1
Latency to Arousal	1-2-1-1	2-2-1-1
Subjective Units	1-2-1-1	2-1-1-1
Predicted Amount	1-2-1-1	1-1-1-1
Predicted Time Arousal	1-2-1-1	1-1-1-1
Predicted Time Viewing	2-1-2-1	2-1-2-1
Attraction Level	1-2-1-1	2-1-2-2
Subject 7		
Amount	1-2-1-2	2-1-2-1
Latency to Arousal	1-2-1-2	2-1-2-1
Subjective Units	1-2-1-1	2-1-1-1
Predicted Amount	2-1-2-1	2-1-2-2
Predicted Time Arousal	2-1-2-1	1-1-1-2
Predicted Time Viewing	1-1-2-1	1-1-2-1
Attraction Level	2-1-2-1	1-2-2-1
Subject 8		
Amount	2-1-2-1	1-2-1-1
Latency to Arousal	2-1-2-1	1-2-2-2
Subjective Units	2-1-2-1	2-1-1-2
Predicted Amount	2-1-2-1	1-2-2-1
Predicted Time Arousal	1-1-2-1	1-2-1-2
Predicted Time Viewing	2-1-2-1	1-1-2-1
Attraction Level	2-1-1-2	2-1-2-2
Subject 9		
Amount	1-1-2-1	1-1-1-2
Latency to Arousal	1-1-2-1	1-1-1-2
Subjective Units	1-1-2-1	2-1-1-1
Predicted Amount	2-1-1-1	1-1-1-1
Predicted Time Arousal	1-1-2-1	2-1-1-1
Predicted Time Viewing	2-2-2-1	2-1-1-1
Attraction Level	2-1-2-1	2-1-1-2
Subject 10		
Amount	2-1-2-1	1-2-2-1
Latency to Arousal	2-1-2-1	1-2-2-1
Subjective Units	2-1-2-1	1-2-1-1
Predicted Amount	2-1-2-1	2-1-1-1
Predicted Time Arousal	2-1-2-1	2-1-1-1
Predicted Time Viewing	2-1-2-1	1-2-1-2
Attraction Level	2-1-2-1	1-2-1-1

Appendix E-6

(Continued)

Subject 11		
Amount	2-1-1-1	1-2-2-1
Latency to Arousal	2-1-1-1	1-2-2-1
Subjective Units	2-2-1-2	1-1-1-2
Predicted Amount	2-2-1-2	1-1-1-1
Predicted Time Arousal	2-2-1-2	1-1-1-1
Predicted Time Viewing	2-2-1-2	1-1-1-2
Attraction Level	1-2-1-2	2-1-1-2
Subject 12		
Amount	1-2-1-1	1-1-1-1
Latency to Arousal	1-2-1-1	1-1-1-1
Subjective Units	2-1-1-1	1-1-1-1
predicted Amount	2-1-1-1	1-1-1-1
Predicted Time Arousal	2-1-1-1	1-1-1-1
Predicted Time Viewing	2-1-1-1	1-1-1-1
Attraction	2-1-1-1	1-1-1-1
Subject 13		
Amount	1-2-1-2	2-1-1-2
Latency to Arousal	1-2-1-2	2-1-1-2
Subjective Units	1-2-1-2	1-1-1-1
Predicted Amount	1-2-1-2	2-1-1-1
Predicted Time Arousal	1-2-1-2	1-1-1-1
Predicted Time Viewing	1-2-1-2	1-1-1-1
Attraction Level	1-2-1-2	2-1-1-2
Subject 14		
Amount	1-2-1-2	1-1-1-2
Latency to Arousal	1-2-1-2	1-1-1-2
Subjective Units	1-2-1-2	1-1-1-2
Predicted Amount	2-1-2-1	1-1-1-2
Predicted Time Arousal	2-1-2-1	1-1-1-2
Predicted Time Viewing	2-1-2-1	2-1-1-1
Attraction Level	1-2-1-2	1-1-1-2
Subject 15		
Amount	1-2-1-1	1-1-2-1
Latency to Arousal	1-2-1-1	1-1-2-1
Subjective Units	1-2-1-1	1-1-1-1
Predicted Amount	1-2-1-1	1-1-1-1
Predicted Time Arousal	1-2-1-1	1-1-1-1
Predicted Time Viewing	1-2-1-1	1-1-2-1
Attraction Level	1-2-1-1	1-2-2-1

Appendix E-6

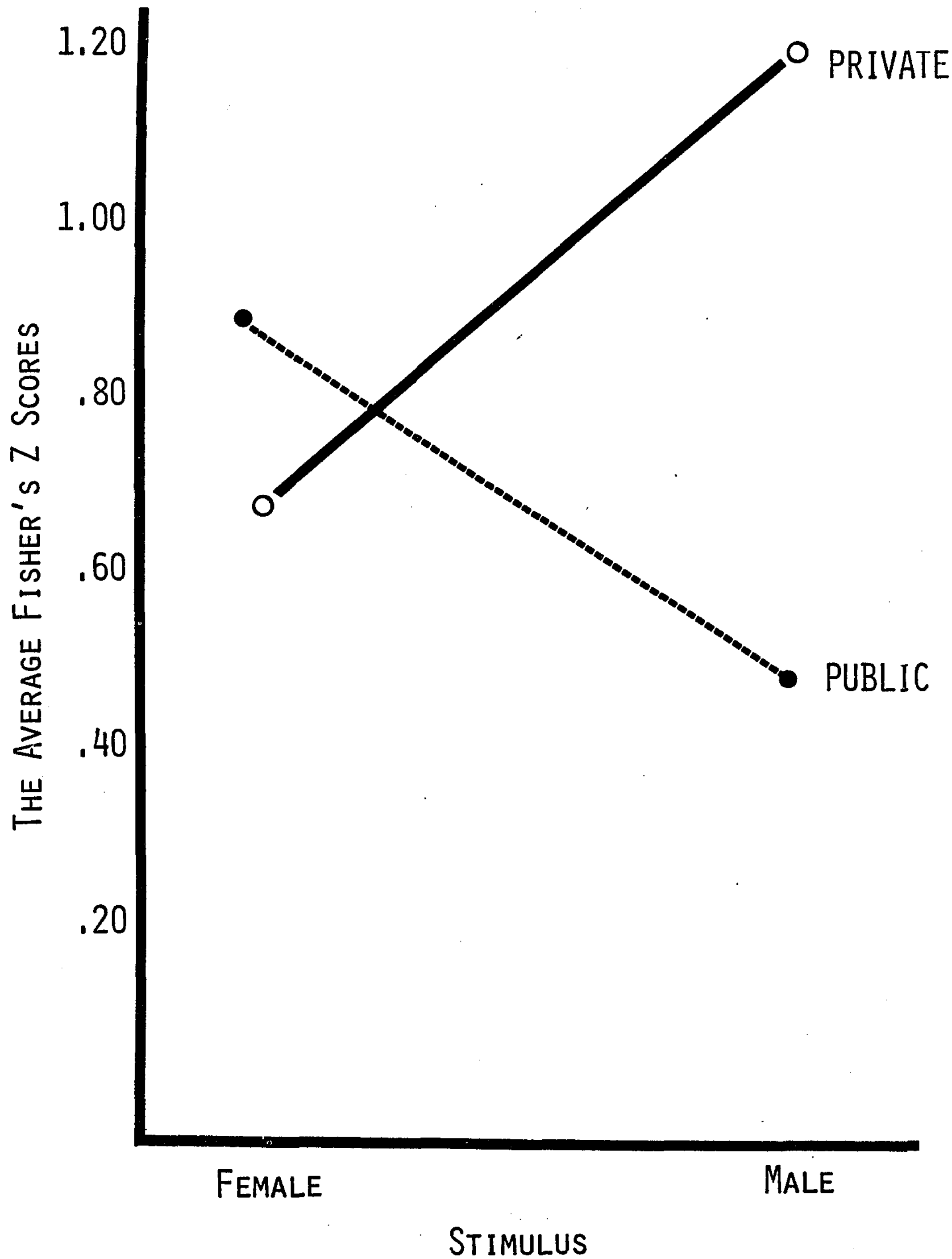
(Continued)

Subject 16		
Amount	1-2-1-1	2-1-1-1
Latency to Arousal	1-2-1-1	2-1-1-1
Subjective Units	1-2-1-1	1-1-1-1
Predicted Amount	1-2-1-1	1-1-1-1
Predicted Time Arousal	1-2-1-1	1-1-1-1
Predicted Time Viewing	1-2-1-2	1-1-1-1
Attraction Level	1-2-1-1	2-1-1-2
Subject 17		
Amount	1-2-1-2	1-2-1-1
Latency to Arousal	1-2-1-2	1-2-1-1
Subjective Units	1-2-1-2	2-1-1-1
Predicted Amount	1-2-1-2	1-2-1-2
Predicted Time Arousal	2-1-2-1	2-1-1-2
Predicted Time Viewing	1-2-1-2	2-1-1-1
Attraction Level	1-2-1-2	1-2-2-1
Subject 18		
Amount	2-1-1-2	1-2-2-1
Latency to Arousal	2-1-1-2	1-2-2-1
Subjective Units	2-1-1-2	2-1-2-1
Predicted Amount	2-1-1-2	2-1-2-1
Predicted Time Arousal	2-1-1-2	2-1-2-1
Predicted Time Viewing	2-1-1-2	1-2-1-1
Attraction Level	2-2-1-2	2-1-2-1
Subject 19		
Amount	1-2-1-1	1-2-1-2
Latency to Arousal	1-2-1-1	1-2-1-2
Subjective Units	1-2-1-2	1-1-1-2
Predicted Amount	1-2-1-1	2-2-2-1
Predicted Time Arousal	1-2-2-1	1-1-1-1
Predicted Time Viewing	1-2-1-1	1-1-2-1
Attraction Level	1-2-1-1	2-1-2-2
Subject 20		
Amount	2-1-1-1	2-2-1-1
Latency to Arousal	2-1-1-1	2-2-1-1
Subjective Units	2-1-1-1	1-1-1-1
Predicted Amount	2-1-1-1	1-1-1-1
Predicted Time Arousal	2-1-1-1	1-1-1-1
Predicted Time Viewing	2-1-1-1	1-1-1-1
Attraction Level	2-1-1-2	2-1-2-1

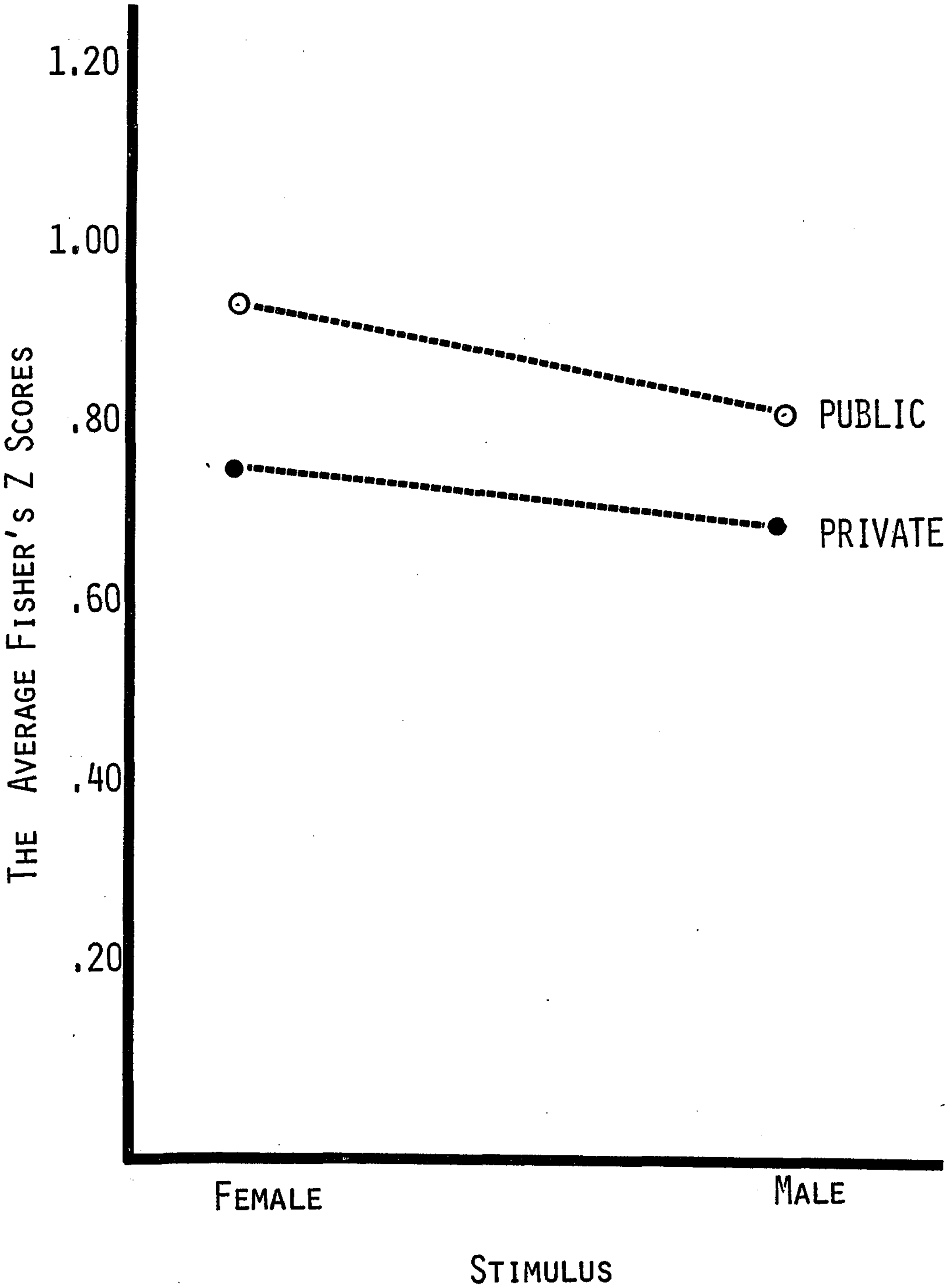
Appendix E-7

<u>The Percentage of Graphs Appearing in each of the Five Categories</u>

Category	Total Number of Graphs	Percentage of Total Graphs
1	8	20
2	10	40
3	8	20
4	5	13
5	3	8



THE DIFFERENCE BETWEEN THE PUBLIC AND PRIVATE CONDITION FOR BOTH FEMALE AND MALE SLIDES DURING THE FIRST FOUR SESSIONS



THE DIFFERENCE BETWEEN THE PUBLIC AND PRIVATE CONDITIONS FOR BOTH FEMALE AND MALE SLIDES DURING THE ADDITIONAL FOUR SESSIONS

APPENDIX F

RAW DATA

Appendix F-1

The Profile of Each Subject

Subjects	Age	Race[1]	Marital Status[2]	Sexual[3]	History Magazine[4]	Films[4]
1	21	W	S	O	4	4
2	27	B	S	O	3	3
3	25	W	M	O	3	2
4	19	W	S	O	3	3
5	19	W	S	O	3	2
6	22	W	S	O	3	3
7	21	W	S	O	3	3
8	23	W	S	O	3	3
9	19	W	S	O	3	2
10	19	W	S	O	3	2
11	24	W	S	O	3	3
12	19	W	S	O	3	2
13	20	W	S	O	3	3
14	31	W	M	O	3	3
15	20	W	S	O	3	3
16	20	W	S	O	3	3
17	21	B	S	O	3	2
18	21	W	S	O	3	2
19	18	W	S	O	2	2
20	19	W	S	O	3	3

[1]B = Black W = White [2] M = Married S = Single

[3]O = Subjects reported exclusively heterosexual activity during past 6 months

[4]Based on 1-5 point scale average or occasionally and '5' meaning more than average.

Appendix F-2

Conversion Table for
Latency to Arousal

Latency	Score[1]
0-7	7
8-14	6
15-19	5
20-23	4
24-26	3
27-28	2
29 and below	1

[1]based on a 1-7 point scale with "7" meaning shorter latency, and "1" meaning longer latency.

APPENDIX G

MISCELLANEOUS

Appendix G-1

Consent Form

I understand that:

(a) this study involves the viewing of highly explicit sexual materials;

(b) my sexual response to this material will be monitored by the device that I have been shown;

(c) I may withdraw at anytime;

(d) all results will be coded by number and that my name will not appear on any of the forms that I complete during this experiment;

(e) this study is being supervised by Dr. Steven C. Hayes, Department of Psychology, UNC-G.

Given the above, I consent to this study.

____
Name

____
Date

____
Witness

____
Date

Appendix G-2

The Debriefing

The debriefing will state that:

It is often assumed that at least three response systems are involved in the composition of most behaviors. These systems are commonly referred to as verbal-cognitive, physiological, and overt-motor. The responses generally associated with fear of snakes, for example, may be manifested verbally ("I am afraid of snakes"), physiologically (an increase in heart rate or changes in skin potential), and behaviorally (avoidance of snakes). Furthermore, it is often assumed that samples obtained from these three response dimensions will be consistent with one another. A snake phobic, for example, should not only report a fear of snakes, but should avoid snakes, and when in the presence of snakes show physiological arousal. Research, however, does not consistently support this latter assumption. That is, information obtained from the three systems frequently does not correlate. As a result, research efforts have been geared toward identifying those variables which might decrease the magnitude of correlation among response systems.

Social variables (e.g., audience effects, social expectations) have been identified as having a significant influence on behavior. In examining the influence of these variables on response systems, researchers have usually been concerned with their effects on either the verbal or motor system, and not their influence on two or more systems simultaneously. Also, in evaluating the relationship among these systems, researchers have invariably sampled these systems at one point in time and then a correlation coefficient is determined. There are problems which makes this approach questionable as a means of evaluating the relationship among response systems. First, since information is collapsed across subjects, it is difficult to determine if response systems correlate or fail to correlate for particular individuals. Secondly, since information is gathered during a single observation, it is difficult to determine the inconsistency of the observed relationship. One means by which these problems might be handled is to apply an individual level of analysis. That is, for several individuals sample each response system associated with a particular behavior over several situations, or times. By applying this approach, patterns established by individuals may be determined. Furthermore, since samples are obtained over several time periods, the (in)stability of the observed relationship can also be determined.

Appendix G-2

(Continued)

The study that you have just participated in was designed to (1) investigate the effects of social variables (e.g. social expectations, audience effects) on response systems within the framework of sexual arousal, and (2) investigate the differences which exist between a group level of analysis and an individual level of analysis. Specifically, in the present study the three systems comprising sexual arousal will be assessed under a public (audience of one or more, heighten expectations), and a private (no audience, minimal expectations) conditions, and across four points in time.

It is expected that these social variables will merely serve to alter the level of responding in each system rather than abate the relationship among systems. Since 'level' changes differ for different subjects, it was expected that when these differences are collapsed across subjects (group level of analysis), the overall relationship between two measures will be attenuated. When data are not collapsed across the various levels (individual level of analysis), the relationships are not influenced by level differences, at least not to the same degree as at the group level of analysis. As such, it is expected that correlations among the various measures will be greater at the individual than group level of analysis.

It is very important that you do not talk about this study to other potential participants since their knowledge of it could seriously bias the results. So please do not talk about the experiment until the semester is over or until you have received a copy of the results. Are there any questions? If you leave your name and address I will be glad to mail the results to you.

Appendix G-3

Sexual Orientation Survey

ID Number________________ Date______________

0. Exclusively heterosexual with no homosexual
1. Predominantly heterosexual, only incidentally homosexual
2. Predominantly heterosexual, but more than incidentally homosexual
3. Equally heterosexual and homosexual
4. Predominantly homosexual, but more than incidentally heterosexual
5. Predominantly homosexual, but incidentally heterosexual
6. Exclusively homosexual

Please place the number of the above statement that applies most to the following:

A. My sexual activities until the age of puberty: _____

My fantasies, in particular, my masturbatory fantasies until the age of puberty: _____

B. My sexual activities until age 15-17: _____

My fantasies, in particular my masturbatory fantasies until age 15-17: _____

C. My sexual activities beyond high school age: _____

My fantasies, in particular, my masturbatory fantasies beyond high school age: _____

D. My sexual activities in the last six months: _____

My fantasies, in particular, my masturbatory fantasies in the last six months: _____