



This is to certify that the
dissertation entitled
Wish-Fulfillment: A Psychophysiological
Investigation of Freudian Theory

presented by
William Michael Gaines

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology


Major professor

Date July 22, 1994



3 1293 01027 6107

LIBRARY
Michigan State
University

PLACE IN RETURN BOX to remove this checkout from your record.
TO AVOID FINES return on or before date due.

DATE DUE	DATE DUE	DATE DUE
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

MSU Is An Affirmative Action/Equal Opportunity Institution

c:\civ\date due.pm3-p.1

**WISH-FULFILLMENT: A PSYCHOPHYSIOLOGICAL
INVESTIGATION OF FREUDIAN THEORY**

By

William Michael Gaines

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

Department of Psychology

1994

ABSTRACT

WISH-FULFILLMENT: A PSYCHOPHYSIOLOGICAL INVESTIGATION OF FREUDIAN THEORY

By

William Michael Gaines

Disguised wish-fulfillment is central to Freud's core metapsychological commitments. Pertinently, Reyher identified a sequence of mentation he calls Tumescence-Orgasm-Detumescence (TOD). TOD is a progression of events (waypoints) that begins pleasantly but increases in energy while depicting derivatives of vaginal penetration, simple harmonic motion (copulation), danger, prohibition, personification of interacting psychic forces, orgasm, castration, and detumescence. Reyher found TOD to organize nocturnal dreams and nightmares. The present investigation not only found TOD in nightmares of student volunteers (N = 75), but also in four other conditions (personal accounts of pain, fear, a good meal, and sexual experience) and a baseline. To assess gratification (venting) a period of free imagery followed each of the five counterbalanced conditions. TOD was ubiquitous. Two rival hypotheses on autonomic (ANS) concomitants of TOD were compared: parasympathetic versus sympathetic. The latter was corroborated. Hypotheses concerning venting (gratification discharge) were corroborated with respect to TOD and shifts in an ANS measure. Also, as hypothesized, somatic symptoms mediated gratification. However, hypotheses concerning gender differences on a castration wish (clinical theory) were not corroborated. Unplanned findings: males were more reactive than were females, and they experienced more venting during the sexual narration. Females vented most following the nightmare, consonant with Freud's view

on gender differences. Pain and fear also mediated pronounced venting with respect to TOD.

ACKNOWLEDGEMENTS

First, I am very grateful to have worked at Michigan State University with Dr. Joseph Reyher, my dissertation committee chairperson. My pride and satisfaction with this research paper is due primarily to his unwavering enthusiasm and conviction to expect only my best efforts. I found his warmth and sense of humor to provide much support for me during the difficult times. The psychoanalytic theory and constant intellectual challenge that he presented to me have been central to the development of my professional identity, both as a scholar and as a clinician. For this I am greatly indebted to him.

I would like to state my appreciation for the considerable assistance with the psychophysiological measures that I recieved from Dr. Thomas Adams of the Department of Physiology. The large amount of time and effort he contributed, as well as his very helpful encouragement, were well beyond mere consultation. He, too, helped instill in me a sense of awe and a curiosity which have enriched and expanded my personal views.

I would also like to thank the members of my dissertation committee for their vital input. This includes Dr. Charles Hanley for his assistance with the research methodology in the initial stages of the study, and Dr.s Norman Abeles, John McKinney, and Andrew Barclay for their critical comments and suggestions on the experimental procedure and the final text.

Finally, a special thanks to the numerous student research assistants that I have had the pleasure to work with during the different phases of this study. The interest and excitement that they brought to the research, and the

special friendships that developed, all helped to make the completion of this study a more memorable experience.

TABLE OF CONTENTS

LIST OF TABLES.....	viii
LIST OF FIGURES.....	xii
INTRODUCTION.....	1
General Background	1
Sexual Derivatives	1
Analogical Models	2
Autonomic Nervous System.....	3
Dream Research.....	4
Nightmares	4
Desomatization.....	5
Punishment.....	5
Gender	7
TOD Waypoints.....	7
Modes of Representation.....	9
Imagistic.....	9
Verbal.....	10
Somatic.....	10
Affective.....	10
Somatic Symptoms.....	10
Episodes.....	11
Self-Preservation Instinct	12
Non-Dream Contrast Conditions.....	13
Sex.....	14
Food.....	15
Pain.....	15
Fear.....	15
Autonomic Nervous System Measures.....	16
Heart Rate.....	16
Electrodermal Activity	16
Peripheral-Blood Flow.....	16
Saliva Secretion	16

Hypotheses	17
Second Thoughts	19
METHOD	21
Subjects	21
Apparatus	21
Dependent Measures	21
ANS Measures	21
Electrodermal Activity	21
Peripheral-Blood Flow	22
Saliva Rating	22
TOD Scoring System	22
Quartiles	27
Procedure	29
Free Imagery Baseline	31
Experimental Conditions	32
RESULTS AND DISCUSSION	34
Inter-Scorer Reliability	34
Episodes	34
TOD Scores	36
Waypoints	36
Castration	38
Somatic Symptoms	38
Preliminary Analyses	40
Verbal Narratives	40
Replication (Corroboration) of TOD Sequence	40
Dream Condition	40
Non-Dream Contrast Conditions	41
Free-Imagery Periods	41
Assessment of Generality	47
Relation of Present TOD Sequence to Original	55
Waypoint Discrepancies	57
Dream Condition	57
Non-Dream Contrast Conditions	57
Free Imagery Periods	58
Autonomic Nervous System Measures	59
Between-Group Contrasts - Conditions	59
Within-Group Contrasts	60
Correlational Analyses	66
Conclusion	68

Hypotheses.....	80
Hypothesis I.....	80
Hypothesis II.....	80
Hypothesis III.....	82
Hypothesis IV.....	83
Hypothesis V.....	84
Hypothesis VI.....	86
Other Findings.....	87
Reactivity to Treatment Conditions	87
TOD Score.....	87
ANS Measures.....	88
Conclusion.....	95
Vicissitudes of TOD Across Conditions.....	95
Gender.....	95
Vicissitudes of TOD Across Post-Free Imagery Periods.....	100
Gender.....	100
Conclusion.....	101
Detumescence	101
GENERAL DISCUSSION	104
APPENDIX A Drive Activation Scale: A Manual for Scoring the TOD Sequence	110
APPENDIX B Manifestations of the Self-Preservation Instinct: Excluded Content in TOD Scoring.....	112
APPENDIX C Sample Verbatim Protocols.....	122
REFERENCES.....	131

LIST OF TABLES

1	Inter-Scorer Reliability for Episodes.....	35
2	Inter-Scorer Reliability for TOD Sequence.....	37
3	Episode by Episode Inter-Scorer Reliability for TOD Waypoints.....	39
4	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Dream Condition.....	42
5	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Fear Condition	43
6	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Pain Condition	44
7	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Sex Condition.....	45
8	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Meal Condition.....	46
9	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Baseline-Free Imagery	49
10	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Dream-Free Imagery.....	50

11	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Fear-Free Imagery.....	51
12	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Pain-Free Imagery.....	52
13	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Sex-Free Imagery.....	53
14	Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Meal-Free Imagery.....	54
15	Comparison of Weighted Quartile Means Between Waypoint Sequence for Combined Experimental Conditions and Combined-Free Imagery Periods.....	56
16	Differences in ANS Measures Between Each Experimental Condition and Its Paired Post-Free Imagery Period.....	67
17	Correlation Matrix for Castration Derivatives and ANS Measures for the Dream Condition.....	69
18	Correlation Matrix for Castration Derivatives and ANS Measures for the Fear Condition.....	70
19	Correlation Matrix for Castration Derivatives and ANS Measures for the Pain Condition.....	71
20	Correlation Matrix for Castration Derivatives and ANS Measures for the Sex Condition.....	72
21	Correlation Matrix for Castration Derivatives and ANS Measures for the Meal Condition.....	73
22	Correlation Matrix for Castration Derivatives, Somatic Symptoms, and ANS Measures for Baseline-Free Imagery.....	74
23	Correlation Matrix for Castration Derivatives, Somatic Symptoms, and ANS Measures for Dream-Free Imagery.....	75

24	Correlation Matrix for Castration Derivatives, Somatic Symptoms, and ANS Measures for Fear-Free Imagery.....	76
25	Correlation Matrix for Castration Derivatives, Somatic Symptoms, and ANS Measures for Pain-Free Imagery.....	77
26	Correlation Matrix for Castration Derivatives, Somatic Symptoms, and ANS Measures for Sex-Free Imagery.....	78
27	Correlation Matrix for Castration Derivatives, Somatic Symptoms, and ANS Measures for Meal-Free Imagery.....	79
28	Comparison of the Number of Castration Waypoints Between Males and Females.....	85
29	Fisher's Z-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods.....	89
30	Fisher's Z-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Males.....	90
31	Fisher's Z-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Females.....	91
32	Hotelling t-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods.....	92
33	Hotelling t-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Males.....	93
34	Hotelling t-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Females.....	94
35	Spearman Correlations for Waypoint Rank Orders Between Experimental Conditions and Between Free Imagery Periods.....	96
36	Spearman Correlations for Waypoint Rank Orders Between Experimental Conditions and Between Free Imagery Periods for Males.....	98
37	Spearman Correlations for Waypoint Rank Orders Between Experimental Conditions and Between Free Imagery Periods for Females.....	99

38	Comparison of Rank Order Positions, Quartile Means, and Standard Deviations for the Detumescence Waypoint Among Experimental Conditions and Free Imagery Periods.....	103
----	---	-----

LIST OF FIGURES

FIGURE		PAGE
1	Comparison of TOD Scores Among Experimental Conditions and Their Paired Post-Free Imagery Periods.....	48
2	Comparison of Median Skin Conductance Response Rate Among Experimental Conditions and Free Imagery Periods.....	61
3	Comparison of Median Skin Conductance Level Among Experimental Conditions and Free Imagery Periods.....	62
4	Comparison of Median Heart Rate Among Experimental Conditions and Free Imagery Periods.....	63
5	Comparison of Median Pulse Volume Among Experimental Conditions and Free Imagery Periods.....	64
6	Comparison of Median Peripheral-Blood Volume Among Experimental Conditions and Free Imagery Periods.....	65

INTRODUCTION

Studies on the psychophysiology of dreaming and sexuality have produced results consistent with Freud's concept of wish-fulfillment of repressed unconscious impulses in his Interpretation of Dreams (1900/1953). REM sleep has been shown to be characterized by pronounced sexual arousal both in males and females (Fisher, 1966; Fisher, Gross, & Zuch, 1965; Karacan, Goodenough, Shapiro, & Starker, 1966) and in females (Abel, 1978). Penile erection (Fisher, 1966; Fisher et al., 1965; Karacan et al., 1966) was found to accompany 95% of REM sleep and occurred in close temporal relationship to onset and termination of the REM periods. In contrast to the data indicating pronounced sexual arousal during dreams, only about 12% of reported dreams have explicit sexual content (Hall & Van De Castle, 1966) and dreams of actual sexual intercourse are quite rare (Snyder, 1967).

Sexual Derivatives

This asymmetry between objective, biological, sexual arousal and the resulting absence of explicitly sexual mentation found in dream research speaks directly to Freud's (1900/1953) conception of the psychic apparatus (topographic theory). Freud viewed the dream as a vehicle for wish fulfillment of repressed (latent) infantile sexual impulses that must find only indirect or implicit "conduits" of gratification in order to avoid censorship or punishment. Therefore, the wish is disguised and distorted through the dreamwork and finds indirect depiction in the manifest content of the dream through derivatives. Freud made it clear that a dream consists of sexual derivatives in the mental apparatus associated with increasing energy (p. 576) and culminating in gratification or an attempt at gratification.

Emergent Uncovering Psychotherapy (EUP) (Reyher, 1977, 1978; Morishige & Reyher, 1975; Moses & Reyher, 1985), a non-biasing method that objectifies psychodynamic processes, employs uncovering techniques to intensify unconscious sexual fantasies activated by an appropriate stimulus (e.g., narrating a dream). Successful uncovering documents that dreaming, spontaneous mentation, and physical symptoms provide vehicles (derivatives) of the repressed wishes that emerge (are directly depicted) in the client's awareness. Reyher (1982) discovered a particular sequence of derivatives when examining client protocols of dream reports that resulted in successful uncovering. These were highly recurrent categories of dream mentation that formed a temporal succession, or more precisely, a progression. In his review of the literature, Reyher and Della Corte (1986) cites Hartmann's nightmare study (1981), in which the author noted a similar progression which becomes increasingly affective and kinetic and terminates explosively. Trosman, Rechtschaffen, Offenkrantz, and Wolpert (1960) reported a sequence that begins with increasing need pressure that is discharged in a pitch of excitement during dramatic visual imagery, followed by quiescence (gratification drive discharge).

Analogical Models

On Reyher's account (1988), the progress of the sexual instinct in the psychic apparatus is accompanied by changes in the state of the genitalia and its functions; the ego is genitalized (p. 54). This progress or sequence of derivatives remains unconscious despite increasing intensity and condenses to form unconscious sexual fantasies which provide a template for the propagation of "analogical models" (Reyher, 1988). The unconscious fantasies recruit energy/libido in their traverse of the psychic apparatus (Freud, 1900/1953) across the various domains by producing whatever

mentation and rhythmic behavior is necessary to further tumescence, increase excitement, and produce orgasm followed by detumescence. This sequence of events (analogical model) depicts/gratifies the unconscious fantasy and has been designated tumescence--orgasm--detumescence (TOD) by Reyher (1988).

TOD is the unfolding of the fantasy as the sexual instinct acquires an aim and object and, thereby, induces conflict. The progression of TOD, therefore, may be arrested with respect to the threat of castration or the actuality of castration (not having a penis and/or testicles). Castration generally occurs at the moment of orgasm. Despite the acute aversiveness (distress) experienced in conscious awareness, castration provides retaliatory gratification for the punitive superego at the same time an unconscious fantasy is being (partially) gratified. Drive gratification in the psychic apparatus observed in TOD, however, is not necessarily correlated with objective physiological sexual arousal and orgasm (Freud, 1900/1953). In the present study, the psychophysiological concomitants of the proposed TOD sequence (unconscious wish-fulfillment) in dreams was investigated with special attention to autonomic nervous system (ANS) activity.

Autonomic Nervous System

The ANS mediates internal bodily stability through its influence over the glands, heart muscle, and smooth muscles. The autonomic nervous system consists of two antagonistic branches, the sympathetic nervous system and parasympathetic nervous system. The basic function of the sympathetic nervous system is the mobilization of the body's fuels to prepare for environmental demands, especially emergencies (Bennett, 1982; Hassett, 1978). Cannon (1927) had previously coined this complex bodily pattern the "fight or flight reaction", suggesting its value in adaptive selection and its

major impact on the evolutionary development of psychophysiology. The function of the parasympathetic nervous system is to counteract this sped-up preparedness by a slowing-down process which serves to restore the body's fuels. Consumative activities, including sex (Masters & Johnson, 1966), are parasympathetically mediated (Bennett, 1982; Hassett, 1978). Moreover, more recent research reveals that the two branches of the ANS can be coupled and reciprocal (negatively correlated), coupled and non-reciprocal (positively correlated), or uncoupled (uncorrelated) (Berntson, Cacioppo, Quigley, & Fabro, 1993).

Dream Research

Previous studies on the ANS activity of sleep and dreaming indicate the surprising observation that REM sleep (dreaming), unlike non-REM sleep, is characterized by parasympathetic nervous system dominance. A reduction in sympathetic nervous system activity during dreams has been observed by Rechtshoffen (1973) and Fisher, Byrne, Edwards, and Kahn (1970), and an increase in parasympathetic discharge was documented by Taylor, Moldofsky, and Furedy (1985). Parasympathetic dominance observed during REM sleep was unexpected in view of the mentally active or demanding nature of many dreams. These findings are consistent, however, with the wish fulfillment function of dreams in which repressed sexual wishes receive disguised gratification.

Nightmares. Of special interest to TOD is the phenomena of disturbing dreams, or nightmares, and their corresponding psychophysiology. Nightmares, as are all dreams, are characterized by pronounced, objective sexual arousal (Abel, 1978; Fisher, 1966; Karacan et al., 1966) and a marked lack of expected sympathetic discharge (which is especially characteristic of nightmares with sexual content). These more recent findings of sexual

arousal are in agreement with early clinical reports of seminal or vaginal flow which was sometimes observed to accompany nightmares (Jones, 1959). These observations, however, are in striking contrast to the dreamers' reported subjective distress. Fisher et al. (1970) introduced the term "desomatization" to explain the lack of correspondence between subjective experience and arousal during REM sleep. These authors propose that desomatization guards sleep by diminishing the physiological reaction of anxiety.

Desomatization. First, this explanation of desomatization fails to account for the pronounced sexual arousal observed during dreams, and second, the discrepancy between parasympathetic dominance with subjective mental and emotional distress has been shown to occur in waking subjects as well as in REM sleep. Tart (1964) reports ANS activity observed during hypnosis (a waking phenomena) to be similar to that of sleeping and dreaming. The discrepancy between parasympathetic discharge and the reported description of personal turmoil has also been observed in waking subjects in studies of dream revisualization and spontaneous mentation (free imagery). Della Corte (1979) found more evidence for parasympathetic discharge (coupled reciprocal mode) in subjects during the revisualization of a disturbing dream than during a pleasant experience. Subjects have also exhibited parasympathetic dominance concomitant with physical symptoms during periods of free imagery following dream revisualization (Morishige & Reyher, 1975).

Punishment

The subjective distress apparent in disturbing or aversive dream mentation (as well as dream revisualization and free imagery) is inconsistent with the typical vegetative and need-gratifying mental and behavioral

concomitants of parasympathetic dominance, unless this mentation is viewed in terms of wish-fulfillment. Reyher (1988) contends that psychophysiological data, objective sexual arousal, and parasympathetic activation, reflect the course of TOD; the progression to gratification of derivatives of an unconscious (latent) sexual wish. The disturbing manifest content (punishment) that results is due to insufficient disguise and distortion. According to Freud (1900/1953) in the Interpretation of Dreams, this punishment gratifies the needs of the punitive aspect of the ego (later to be conceptualized as the superego) whenever it detects the (too blatant) derivatives of a repressed sexual wish. Punishment for the incestuous wish is castration. Also germane, Fisher et al. (1966) observed that the degree of objective, biological sexual arousal was inversely related to the occurrence of threat or aggression in dreams. In the presence of ongoing erection during dreams, a shift in dream content to anxious or aggressive material results in a rapid detumescence. This anxious content included danger situations related to castration, or loss of love, or love object.

Although insufficiently disguised dreams are subjectively experienced as nightmares (punishment) they may, according to Freud, be more gratifying (drive-laden) than non-disturbing dreams; dreams (or dream revisualization and free imagery) offer a vehicle both for the fulfillment of a repressed sexual wish and/or the wish of the ego (superego) to punish (Freud, 1900/1953, p. 591). In agreement is Jones (1959) who views masochistic needs or a wish to submit to punishment, in addition to sexual strivings, to be central features of nightmares.

The aforecited psychophysiological evidence notwithstanding, Freud (1900/1953) dismissed attempts to relate the psychic apparatus to neuroanatomical location and physiology. Irrespective of the direction of

effects (sympathetic versus parasympathetic), any significant outcome bears on the putative autonomy of the psychic apparatus.

Gender

Studies of Freud's concept of punishment (castration) for the incestuous wish indicate that this self-punishment or retaliation by the superego tends to occur as a function of gender. Castration or threat of castration depicted in the projective data of the Blacky Test (Blum, 1949) and TAT (Schwartz, 1955, 1956) occurred significantly more with male subjects than with female subjects. Results showing similar gender differences were also obtained in other studies (Schneider, 1960; Pitcher & Prelinger, 1963; Gottschalk, Gleser, & Springer, 1963; Lewis, 1969). In a dream study highly endorsed as empirical verification of Freudian theory (Lindzey & Hall, 1965; Kline, 1972), Hall and Van DeCastle (1965) found significantly more indications of castration in the manifest dream content of males than in that of females. The authors proposed that castration "anxiety" is probably greater in response to threat of punishment (loss of one's penis) that has yet to occur (male) than to that which has already happened (female).

TOD Waypoints

Each waypoint represents the characteristic form of mentation that is generated by an infantile sexual wish as it first becomes active, increases in intensity, and culminates in gratification/wish-fulfillment. As the wish increases in intensity, it acquires an aim (active or passive) and a preferred object (usually a parent), and in doing so triggers the reaction of the prohibitory and punitive aspects of the psyche. In Freud's formulation of the psychic apparatus, derivatives of the wish, its aim and object and prohibition and punishment are produced as the wish traverses the psychic apparatus (Reyher, 1988). Waypoints are derivatives.

The progression of recurrent derivatives or waypoints in the analogical model (TOD) enable us to identify and track changes of the genitalia in the psychic apparatus. In addition to the sexual derivatives depicted in the advance of TOD are the aforementioned depictions of castration, providing punishment for repressed incestuous impulses. Three other waypoints depicting unconscious conflict also make up the TOD sequence. "Danger" is a signal or warning of the threat of impending punishment/castration, and "Prohibition" includes the consequent obstruction or restriction to achieving one's (unacceptable) aims. "Personification" refers to the agent of punishment/castration in dream mentation and is a condensation of various other waypoints. It is often phallic (Tumescence), with rhythmic movement (Copulation), characterized by implicit or explicit threat (Danger), and presenting with intense, increasing energy/activity (Drive Intensification - I or -II). While the TOD sequence may be present in non-dream mentation as well, the Personification waypoint is solely a product of the dream work.

The waypoints are as follows:

1. Tumescence
2. Drive Intensification - I
3. Personification
4. Penetration
5. Copulation
6. Danger
7. Prohibition
8. Castration
9. Drive Intensification - II
10. Orgasm/Ejaculation
11. Detumescence

(Note. Detumescence was considered by Reyher (1982) as a final waypoint in the progression of sexual derivatives, but was not included in the TOD sequence due to imprecise criteria).

Modes of Representation

In Reyher's original scale (1982) the first waypoint, Tumescence, was defined by a pleasant sensory experience, and the following waypoints were defined according to imagistic depiction (see Appendix A). The waypoints observed in EUP, however, have been observed to find conduits of gratification (modes of representation) within imagistic, verbal/discursive, somatic, affective, and behavioral domains (Reyher, 1988). Therefore, his present, revised scoring system (1991) is more comprehensive, making use of different modes of representation for each waypoint.

On Reyher's account, the blatancy of depiction of the TOD waypoints and shifts in modes of representation in spontaneous mentation are in constant fluctuation due to the vicissitudes of the advancing sexual instinct and prohibition/punishment. The present scale does not compare or evaluate the different modes, but rather takes into account these continuous shifts in representation due to repressive forces. Each mode is a vehicle of gratification which depicts (indirectly) some facet of an unconscious fantasy and/or the prohibition and punishment it cues as TOD unfolds. What follows are four domains pertinent to the present research. The behavioral/motoric mode was excluded because subjects were immobilized; the mechanical apparatus used to monitor levels of ANS functioning was attached to the subjects and inhibited their bodily movement.

1. **Imagistic**: The visualization of body image in relation to the activation of TOD is usually prevalent in subjects' reports during "imagery" tasks. Depiction through this mode of representation is thought to be drive

gratifying due to its physical, functional, and qualitative similarities to ongoing changes in the genitalia.

2. **Verbal**: Derivatives in this mode are linguistic and abstract in contrast to the concrete and depictive imagistic mode, but are scored for TOD due to their concrete, perceptual referents. Semantically-mediated derivatives are quite common and conventional and employ more secondary process, and are, therefore, viewed to be less drive gratifying (but ubiquitous in use).

3. **Somatic**: Those derivatives which find expression in a somatic mode during the course of the subjects' verbal report, are viewed to be extremely drive gratifying. They are limited, however, in their utilization to embody or mediate the aims and objects of the unfolding unconscious fantasy.

4. **Affective**: On Freud's view, these processes mediate a discharge of energy. They indicate the changes in excitement or intensity during the TOD sequence and sometimes clearly approximate the somatic/affective changes which accompany or result from the unconscious sexual fantasy.

Somatic Symptoms

Among Freud's earliest writings he observed that certain ideational content or affects can be cut off from associative connections with other ideas (Breuer & Freud, 1895/1955, p. 165). Since such content was not "allowed" conscious expression through speech due to prohibitive forces, it was sometimes expressed through motoric or somatic phenomena (symptoms). He later more fully conceptualized these symptoms as substitutes for, and derivatives of, unconscious sexual impulses which remain in abeyance as a consequence of repression (Freud, 1926/1959, p. 95). Due to the further effects of repression, this substitutive process is also often prevented from finding discharge through motility in order to keep it from being transformed into action and impinging upon the external world. As a result, this process is

forced to expend itself in making alterations in the subject's own body (converted into somatic symptoms). These symptoms (substitutes) which provide gratification for the impulses of the sexual instinct are very much reduced, displaced, and inhibited, and, therefore, are typically no longer recognizable as satisfaction.

Episodes

Recall that the TOD sequence begins with the activation of a sexual wish and ends with orgasm (and detumescence) or its analogue. In between the waypoints indicate the interplay between a sexual wish and its gratification discharge (Reyher, 1988). In order to assess the actual sequence order of these derivatives, each waypoint received a quartile value (to be explained in the Method Section) based on its relative position in the verbal reports. In this way, each condition's particular sequence of waypoints (mean quartile values) could be compared to the progression of waypoints in the TOD sequence found by Reyher (1988). The rank order sequence of waypoints for each condition was correlated with the order found in Reyher's TOD sequence and this correlation is that particular condition's "TOD score".

The quartiles in each verbal report were established by first determining specific scene/segments or "episodes" which indicate shifts in drive activation due to the vicissitudes of the sexual instinct. An episode is defined as a discreet unit of mentation that occurs as the wish acquires an aim and object (Reyher, 1988). In order to score a protocol for the progression of TOD waypoints, the episodes were first established and then marked off into quartiles. Visual episodes were employed to score verbal text by Reyher (1982) who investigated unconscious processes in research subjects' reported dreams and fantasies. The present format was extended to include an

additional verbal narrative category. A change in scene (episode) is evidenced by any one of the following:

1. New location or setting. Changes in locations are present in most all reported visual imagery. Scenes change to provide expression for the advancing unconscious wish to most effectively proceed toward gratification. The previous scene may have provided insufficient opportunity for gratification or possibly too blatant a depiction resulting in prohibition or threat of punishment (resulting in the shift to a new scene/episode).

2. Object added/subtracted from scene. A scene may change according to a depicted object or the actions/activity of the object. For example, an object (eg., a monster) may enter or leave the setting, thus changing the scene.

3. Verb change (passive to active). Verb change indicates a shift in drive activation, such as when a person who is described in passive terms.(eg., waiting anxiously) suddenly initiates action towards a goal.

4. Advance in time. An advance in time indicates a shift in the status of the progressing wish and most typically accompanies one of the other episode criteria.

5. Change of subject or idea (narrative). Finally, subjects sometime add verbal narrative to their reported imagery, changing topics or switching to new ideas. This is observed during most verbal reports, and most typically during unstructured verbal tasks (eg., free association/free imagery). Like a visual scene, a verbal narrative provides gratification of unconscious sexual wishes, and a shift in content indicates a shift (a new episode) in drive activation.

Self-Preservation Instinct

In addition to the repressed wishes of the sexual instinct, Freud formulated that mentation is also determined by the opposing self-preservative

instinct of the ego (1916-17/1963, p. 357). In order to fend off possible environmental threat, the ego employs "security measures" (Freud, 1926/1959, p. 88). which Reyher (1992a) has extended to include the domain of interpersonal encounters. Particular mentation in the subjects' reports contain such security measures due to the threat or experience of narcissistic injury in the uncertain research setting and this mentation was excluded from the scoring of episodes and the TOD sequence. The conceptual background and scoring criteria which differentiates manifestations of the sexual instinct from the self-preservative instinct in the subjects' verbal reports are presented in detail in Appendix B.

Non-Dream Contrast Conditions

A potential source of information on the gratification of nightmares and their electrophysiological concomitants is a contrast with the narrative accounts of other life experiences that have theoretically similar or different components. Consistent with Freud (1905/1953), sexual derivatives should be most blatant or depictive during affective or physiological excitement. Any intensification of excitement/stimulation is libidinized ("trenches on sexuality" p. 203) and, therefore, provides derivatives (vehicles) for the gratification of unconscious sexual wishes. Accordingly, sexual derivatives should accompany excitement in non-dream experiences in the waking state, as well as in dream mentation.

Della Corte (1979) compared the revisualization of dreams with non-dream experiences and found evidence consistent with the view of dreams as wish-fulfillment. Her subjects were instructed to revisualize both a disturbing dream and a pleasant experience, each followed by a post period of free imagery. The results were consistent with Freud's topographic theory of dreams; compared to non-dream experiences, dreams were characterized by

high implicit sex (repression), highly distorted (disguised) mentation, and parasympathetic discharge (gratification). The post-dream free imagery contained low implicit sex and sympathetic activity, which indexes low sex drive intensity and equipose (detumescence?), suggesting a venting or "saftey valve" function of dreams (Freud, 1900/1953). These findings were consistent with Freud's view of dreams as vehicles for the gratification of repressed sexual wishes.

The "pleasant" experience used as a contrast condition in Della Corte's (1979) investigation, however, may have been relatively mild, providing only minimal depiction/gratification of drive derivatives. The subjects' dream reports may have contained more sexual derivatives as a result of the more gratifying intensity or thrill of the "disturbing" content. Therefore, in the present study the reported mentation (TOD/castration), and the ANS balance of dream revisualization (and post-period of free imagery) were compared to that of more exciting, arousing non-dream contrast conditions/post-free imagery. Freud (1905/1953) contended that any experience, if sufficiently exciting, including pain, can provide a vehicle for the advancement of a repressed sexual wish.

Four non-dream contrast imagery conditions were chosen for their diverse range of subject matter and apparently exciting, drive-laden content. The revisualization of two subjectively positive or gratifying experiences were selected: (1) sex, and (2) food consumption ("eating a delicious meal"). Two subjectively negative or distressful experiences were also selected: (3) physical pain, and (4) fear.

Sex. The recall of a recent sexually-arousing experience ought to stimulate unconscious incestuous fantasies and its prohibition.

Food. Freud (1916-17/1963, p. 308) noted that the sexual instinct, as expressed in biology, is analogous to the instinct of taking nourishment, and to hunger. Eating was also viewed as the prototypical mode of gratification which makes it particularly susceptible to its use for substitutive unconscious sexual gratification (p. 313).

Pain. Freud (1924/1957) felt that in the case of a great number of internal physiological processes, sexual excitation arises as a concomitant effect, as soon as the intensity of those processes passes beyond certain quantitative limits. The excitation of pain and unpleasure would be bound to have the same result (p. 163). Elsewhere Freud (1919/1955) stated that the physical pain that is endured in fantasies of parental abuse may also be libidinized. The pain/abuse is not only the punishment for the forbidden incestuous wish, but also a substitute for it (p. 187). According to Freud, physical pain "trenches on sexuality" and may or may not also gratify an unconscious wish for punishment (1905/1953, P. 203).

Fear. Intense fear or anxiety, like pain, is viewed by Freud (1926/1959, p. 132) to also originate in excitation, producing unpleasure, as well as finding relief through acts of discharge. Freud (p. 165) distinguished between two types of anxiety: realistic and neurotic. Realistic anxiety occurs in response to the threat of an external danger, signaling the self-preservative fight or flight reactions. Neurotic anxiety, on the other hand, is the response to an internal danger (emerging sexual impulse threatening to break through repression). A surplus of unutilized libido finds discharge in the generation of neurotic anxiety. Realistic and neurotic anxieties may be mingled when an instinctual demand/danger becomes attached to a real external danger

The nightmare was expected to have more in common with the recall of the sex and eating experiences because of their gratification of biologically-

based appetitive cravings. Fear and pain are obviously not biologically driven, although theoretically capable of providing psychological substitutes.

Autonomic Nervous System Measures

The measure of ANS functioning consisted of heart rate, electrodermal activity, peripheral-blood volume, and saliva secretion. Heart rate and electrodermal activity are two of the most commonly used ANS Measures in psychophysiological research, long recognized for their sensitivity to shifts in thought and affect.

Heart rate. The cardiovascular measure of heart rate was probably the earliest used indicator of psychophysiology. Heart rate accelerates when mediated by sympathetic fibers and decelerates with parasympathetic activation (Hassett, 1978).

Electrodermal activity. Most investigators view sweat-gland activity to be largely responsible for electrodermal activity. Increased sweat gland and electrodermal activity represent sympathetic activation and a decrease represents a relaxation of sympathetic control. This relaxation or inhibition of sympathetic control is viewed to be mediated by the antagonistic parasympathetic nervous system (e.g., Edmonston, 1981; Hassett, 1978); the two ANS branches are coupled and reciprocal (Berntson et al., 1993).

Peripheral-blood flow. Another standard ANS measure is the amount of blood flow in the peripheral blood vessels as indexed by finger-pulse volume. Peripheral vasoconstriction corresponds to sympathetic activation while vasodilation represents a relaxation of sympathetic control, and by inference, increased parasympathetic activity (Edmonston, 1981; Hassett, 1978).

Saliva secretion. Saliva secretion is mediated by the sympathetic and parasympathetic nervous systems through fibers received by the salivary

gland. Parasympathetic activity results in a copious secretion of thin, watery saliva, and sympathetic activity results in smaller quantities of thick, viscous saliva (Carlson, 1986).

Subjective saliva rating has been a lesser used ANS measure which is usually obtained through objective mechanical means such as suction tubes or cotton swabs (White, 1977). Although early attempts to manipulate saliva secretion with externally-viewed stimuli were unsuccessful, White (1978) found significant changes in saliva to accompany self-generated imagery (i.e., an increase with food imagery, and a decrease with distressing imagery).

Reyher (1988) found that the revisualization of eating a delicious meal evoked significantly higher ratings of saliva than did the revisualization of either a satisfying sexual experience or disturbing dream. The sexual imagery and dream imagery did not differ significantly in terms of salivation ratings.

Hypotheses

1. The Tumescence - Orgasm - Detumescence (TOD) sequence observed in subjects' reported mentation is characterized by more parasympathetic activity than mentation containing no TOD sequence. Such ANS activation is consistent with the gratification of unconscious sexual wishes indicated by the advance of TOD (Reyher, 1988).

2. The report of physical symptoms, suggesting an intensification of libido, is characterized by more parasympathetic activity than during the absence of reported symptoms.

3. Imagery conditions containing the TOD sequence are followed by periods of free imagery not characterized by TOD.

This hypothesis is consonant with the gratification or "venting" effect that results from the advancement of the repressed wish (TOD). Freud, in his Interpretation of Dreams, called the gratification discharge provided by dreams

a "saftey valve" effect which is commonly referred to by others as its venting function. Dreams enable dammed up libido to find disguised gratification through the fulfillment of a prohibited unconscious sexual wish. This saftey valve effect or venting effect has received impressive corroboration in the sleep/dream literature (eg., Pivick, 1978). Subjects are awakened at the onset of REM dreaming and given a substitute vehicle for gratification, i.e., creating a TAT story, Rorschach percepts, and excersize. These interventions prevent REM rebound on subsequent nights' sleep which reliably occurs after REM sleep deprivation (Reyher & Della Corte, 1986).

4. Depictions of the castration wish are observed more often in the TOD sequences reported by males than in the TOD of females. Freud (1933/1964) advised us that males anticipate castration upon the fulfillment of a sexual wish because the preferred object embodied by that wish is the mother; castration is the punishment.

5. TOD sequences consisting of depictions of both the sexual wish and castration wish are "doubly" gratifying and are characterized by more parasympathetic activity than TOD consisting of the sexual wish only.

In Freud's interpretation of dreams, he opined that punishment occuring in dreams is gratifying in its own right, and this is in addition to the gratification provided by the disguised wish-fullment. Thus, punishment dreams are "doubly" gratifying.

6. Depictions of the castration wish observed in the TOD sequences of females are characterized by more parasympathetic activity than the castration wish in TOD reported by males.

The rationale for this hypothesis is derived from Freud's claim (1925/1961) that females unconsciously fantasize that they once had a penis that has been lost which increases their self regard. Furthermore, this fantasy

includes the anticipation of acquiring a new penis. Thus, for females the notion of castration, on the one hand, assures them that at one time they had a penis, and on the other hand, incites the anticipation of acquiring a new one.

Second Thoughts

After the formulation of the experimental hypotheses, a review of the research literature on the electrophysiology of sex (as opposed to dreaming) suggested that TOD should be more associated with sympathetic nervous system effects. The sexual cycle was found by Wenger, Averill, and Smith (1968) to actually be more a combination of sympathetic and parasympathetic activity, marked by a dramatic sympathetic increase as the cycle approaches orgasm. In agreement are the findings from Masters and Johnson's study (1966) of the human sexual response which indicate that the cycle is essentially characterized by increasing arousal and sympathetic dominance. This autonomic shift was most clearly discussed by Fisher et al. (1983) who addressed the differences between passive sexual arousal, eg., watching an erotic film, and active sexual arousal, eg., sexual participation (actual behavior or dream mentation). While the passive arousal is primarily mediated by the parasympathetic nervous system, the active arousal also includes multiple indices of sympathetic increase, followed by a massive overflow into the voluntary nervous system with convulsive body movement. Motor behavior is associated with sympathetic effects.

While the progression of the TOD sequence is thought to be need gratifying (usually associated with parasympathetic mediation), this body of literature suggests that the active, goal-directed progression of events leading up to the completion of this sequence may, in fact, be characterized more by a shift toward sympathetic dominance.

Freud himself seemed to have aligned himself with a sympathetic nervous system interpretation (Reyher, personal communication). In his Project, Freud (1895/1966) stated that the brain is a "sympathetic ganglion" (p. 303) and in the Interpretation of Dreams (1900/1953) he asserted that every dream has an "arousing effect" (p. 575). Elsewhere (1924/1961), he noted that pleasure can accompany an increase in sexual tension, in fact, it may inhere in rhythmic activity, "the risings and fallings of the volume of stimuli" (p. 160). Accordingly, the experimental hypotheses are regarded as mere heuristic empirical hypotheses rather than derivations from Freud's topographic core commitments (Reyher, 1992b).

METHOD

Subjects

Seventy-five MSU undergraduate students, thirty-seven male and thirty- eight female, served as volunteer subjects in exchange for credit in their psychology classes. While the subjects were allowed to terminate their involvement at any phase of the experiment without penalty, all subjects participated for the full duration.

Apparatus

Physiological measures of electrodermal activity, peripheral blood flow, and heart rate were monitored on a Grass #5 polygraph. Electrodermal activity was recorded by Yellow Springs electrodes attached to the medial phalanx of the second and third finger of the subject's non-dominant hand. Peripheral blood flow and heart rate were recorded by an oncometer cuff used to gauge air transmission. The oncometer cuff was placed on the distal phalanx of the first finger of the non-dominant hand using a PT-5 transducer.

Sessions were recorded on audiotape in order to code the subjects' verbal report in terms of depictions (analogical models) of wish-fulfillment/punishment (Reyher, 1988).

Dependent Measures

ANS Measures

Electrodermal activity. The tonic measure of skin conductance level (SCL) and the phasic measure of skin conductance response (SCR) were recorded. The SCL for each report was the mean value of conductance during that report exclusive of phasic changes. The SCR was defined as a deflection of 500 ohms or more and was expressed for each report in response/sec. Resistance values were all translated directly into units of conductance (micromhos).

Peripheral-blood flow. The tonic measure of finger-blood volume (BV) and the phasic measure of finger-pulse volume (PV) were recorded (Hassett, 1978). Heart rate (HR), (BV), and (PV) for each report were the mean values of four 10-sec sampling periods at the end of each quarter. Volumetric displacement inside the oncometer cuff was measured in cubic mm. Due to SNS activation and the corresponding hardening of blood vessel walls, the scorable trace required to record HR was unavailable for most of the conditions for approximately one-half the male and one-half the female subjects. All data, however were scorable for BV and PV.

Saliva rating. Subjects were asked to rate the amount of saliva they felt to be in their mouth with "one" being very dry and "five" being very wet. These "ratings" were requested at the end of each imagery condition and at the end of the pre- (baseline) and post- periods of free imagery.

TOD Scoring System

The following scoring system is a revised version of Reyher's earlier Drive Activation Scale (1988).

TUMESCENCE

Imagery: (genital imagery)

Male:

penis - all cylindrical or phallic objects, eg., mushrooms, bananas, snakes, vehicles, frogs, babies.

Body representations: nose, fingers, toes

testicles - sac, pouch, bag, balls, nuts, rocks.

Body representations: eye balls

Female:

vagina/labia majora - open door, hole/opening, clam, flower, purse, doughnut, bagle, pathway, street, canyon, pin cushion.

Body representations: mouth, eye sockets, nostrils

clitoris - pug nose, button, cherry, berry, peg, twig

Male/Female:

pubic hair - hair, grass, astro turf, matted or fuzzy material

anus - backyard, backside, rear entrance, basement, coal bin, dark/dirty orifice or opening

Verbal: Male - #3, "friends", 2 companions

Female - "open oneself to new ideas"

Male/Female - "a hairy situation", "feeling shitty"

Somatic: pleasant sensory experience, feeling warm, light, floating, tingle, itch, tickle

Affect: optimism, good mood, in good spirits

DRIVE INTENSIFICATION - I

Imagery: acceleration of movement or increase in kinetic energy, step up in excitement, running instead of walking, yelling instead of talking, getting faster, louder, light getting brighter, revving up engine before a race

Verbal: begin final push, plans put into effect

Somatic: feeling nauseous, feeling hungry, hot, high, shakey, light-headed, feel like one is spinning, continuous laughter, anxiety/tension related to imagery

Affect: increase in excitement

PERSONIFICATION

Imagery: (1) criminal, burgler, robber

(2) large, powerful animal (bull, lion), or machine (bulldozer), or natural force (fire, tornado)

(3) large or powerful public, historic, or lit. character (a knight, "Jason", etc.)

(4) large or powerful mythological or fantasy character (demon, monster, etc.)

(5) authority: police, teacher, doctor, coach

Verbal: authority, power, omnipotence

Somatic: (no currently known derivatives)

Affect: awe, reverence

Note. Personification is a condensation of other waypoints and is solely a product of the dream work. Therefore, it is only scored in the Dream condition and Dream-free imagery periods.

PENETRATION

Imagery: any object that passes through an opening or surface, going into but not out of something, going through an open door, going into a tunnel, entering a room, forward thrust, also going "down the street", "up the ally", dialing a rotary phone (penet/cop)

Verbal: getting past the opposition, entering a new domain or getting into a new idea, "taking it all in", to intrude

Somatic: "tightness" in head, body, or limbs, "lump in throat", pressure on head and/or shoulders, head or body being squeezed, band around head

Affect: (no currently known derivatives)

COPULATION

Imagery: any harmonic motion or rhythmic behavior, periodic undulating,

rotory, in/out, up/down, peddling a bike, swimming, walking, watching tennis, rocking a cradle, shaking hands, dancing, sucking, repeated kissing, chewing, eating (penet/cop), pulsating forms

Verbal: directing or regulating activity, to perpetuate the continuation of present course of action, to cooperate with others vital to one's own interest, to operate, to interact

Somatic: heart beat, breathing, pulse or head throbbing

Affect: (no currently known derivatives)

DANGER

Imagery: any sign, warning, or indication of something about to happen, communication of danger, lit firecracker, ticking bomb, knives, weapons, sharp, an edge, an alarm, thunder before a storm

Verbal: plans could go wrong, detection of design fault

Somatic: when an unpleasant waiting or fear includes an uneasy or "queazy" physical feeling

Affect: unpleasant waiting, fear, dread, feeling "on edge", apprehension, scared

PROHIBITION

Imagery: barrier, obstacle, locked door, stop sign, speed limit sign, scene or part of scene blocked or vague, distance from imager to scene, inability to image, voice says "no", person looks away, running away from something

Verbal: to forget, consciously avoids something, "reach my limit", "something won't let me", denial or negation of one's wishes

Somatic: tired, heavy, paralyzed, sleepy

Affect: guilt, culpability, or denial of affect

CASTRATION

- Imagery:** an injury, damage, harm, to get hurt, a cut or abrasion, something gets stabbed or shot, or is separated into parts with suddenness of violence, to get ripped or torn, burned, blood, red, death
- Verbal:** "it pained me to see her", "it kills me", to get "cut down", "break it up", to "see red"
- Somatic:** experience of pain, to feel physically hurt or sore, feeling or pain of getting cut or of a bodily break, burning, to feel cold, dizzy, shortness of breath
- Affect:** horror, dismay, or any dysphoric affect which accompanies castration

DRIVE INTENSIFICATION - II

- Imagery:** increase in power and rapidity of movements beyond "DI-I"
- Verbal:** put in "overdrive"
- Somatic:** continuous or prolonged somatic-sensory feelings beyond "DI-I"
- Affect:** significant increase in excitement or affect, exclamation (eg., "Damn!", "Oh God!"), start to feel overwhelmed or "out of control", "want to explode" with anger, etc.

ORGASM/EJACULATION

- Imagery:** climactic or explosive events, crashing waves, flashes of light or colors, bomb exploding, climactic flurry of activity, frenzy, yelling and screaming, squirting, spraying, shooting, or stabbing someone or something, volcano erupting, spitting, urination, explosive, defecation, emission from nozzle
- Verbal:** "so mad I could spit", to "blow one's top", to "score", a victory, graduation,

- Somatic:** somatic-sensory description of violent physical contact/activity, report of sudden shaking, chill, shiver, spasms, a "rush"
- Affect:** brief, focused, overwhelming affect/excitement
- Note. To be shot, hit, stabbed, etc., is scored Org and Cast.

DETUMESCENCE

- Imagery:** shrinking, getting smaller, sitting down, going down, reduction, dark color faded, beige, something is depleted of energy, inoperative, progressive diminution of movement, suspension of movement, become wrinkled, become soft
- Verbal:** reference to accomplishment or achievement
- Somatic:** pleasant sensory afterglow, physical relief, relaxation, depletion of one's own energy, tranquil, calm
- Affect:** pride, emotional relief, contentment

Quartiles. The present format used to partition verbal episodes into quartiles was previously employed by Reyher (1988) in order to assess the sequence of TOD waypoints. Subjects' verbal reports needed to have at least two episodes in order to receive quartile scores (indicating an advancement of drive activation). Zero or one episode indicates that either the repressive or self-preservative forces of the ego had arrested or pre-empted the advancement of TOD (see Appendix B). When a verbal report had two or more episodes, quartiles were marked off and superimposed so that each waypoint received a quartile score. The mean quartile score for each waypoint was determined and the sequence of mean quartile scores for each condition was then rank ordered and correlated with Reyher's TOD sequence (1988). The Spearman Rank Correlation Coefficient was used in order to establish each condition's "TOD score". The scoring of quartiles was generally unproblematic for protocols

containing 4, 8, 12...4 (n) episodes (see 4, 8, and 12 below). Otherwise the assignment of quartiles relative to episodes followed the following convention:

<u>Quartiles</u>	<u>2 Episodes</u>	<u>Score</u>	<u>Quartiles</u>	<u>3 Episodes</u>	<u>Score</u>
I, II	1	1.5	I	1	1
III, IV	2	3.5	II	2	2
			III, IV	3	3.5

<u>Quartiles</u>	<u>4 Episodes</u>	<u>Score</u>	<u>Quartiles</u>	<u>5 Episodes</u>	<u>Score</u>
I	1	1	I	1,2	1
II	2	2	II	3	2
III	3	3	III	4	3
IV	4	4	IV	5	4

<u>Quartiles</u>	<u>6 Episodes</u>	<u>Score</u>	<u>Quartiles</u>	<u>7 Episodes</u>	<u>Score</u>
I	1,2	1	I	1,2	1
II	3,4	2	II	3,4	2
III	5	3	III	5,6	3
IV	6	4	IV	7	4

<u>Quartiles</u>	<u>8 Episodes</u>	<u>Score</u>	<u>Quartiles</u>	<u>9 Episodes</u>	<u>Score</u>
I	1,2	1	I	1,2,3	1
II	3,4	2	II	4,5	2
III	5,6	3	III	6,7	3
IV	7,8	4	IV	8,9	4

<u>Quartiles</u>	<u>10 Episodes</u>	<u>Score</u>	<u>Quartiles</u>	<u>11 Episodes</u>	<u>Score</u>
I	1,2,3	1	I	1,2,3	1
II	4,5,6	2	II	4,5,6	2
III	7,8	3	III	7,8,9	3
IV	9,10	4	IV	10,11	4

<u>Quartiles</u>	<u>12 Episodes</u>	<u>Score</u>	<u>Quartiles</u>	<u>13 Episodes</u>	<u>Score</u>
I	1,2,3	1	I	1,2,3,4	1
II	4,5,6	2	II	5,6,7	2
III	7,8,9	3	III	8,9,10	3
IV	10,11,12	4	IV	11,12,13	4

Procedure

The proposed TOD sequence of unconscious derivatives and the accompanying ANS balance were measured through the use of dream revisualization . Richardson (1969) and Zikmund (1972) were among the first contemporary investigators to note that the revisualization of a scene or experience can reactivate the needs or affects that were originally associated with it (see also Moses & Reyher, 1985). Unlike the reviewed sleep studies in which subjects were awakened for retrospective reports of dream content, the present study's use of dream revisualization/recall allowed for the monitoring of putative derivatives and corresponding ANS activity as they both occurred. In this way, the differential ANS balance of the TOD sequence depicted during the report of the dream and the other experiences could be assessed.

Subjects were called prior to their scheduled appointments in order to brief them about the nature of the study and to instruct them about the different experiences that they would be asked to revisualize and describe. This

procedure was designed to reduce the level of novelty or surprise experienced by subjects during experimental sessions which has been shown to affect electrodermal activity (Zuckerman, 1971; Edelberg, 1972; Hoon, Wincze, & Hoon, 1976). First, subjects were instructed that the study was a comparison of the psychophysiology of dream revisualization with that of the imagery of other non-dream emotional experiences. They were also informed about the ANS measures that would be employed.

Second, subjects were instructed that they would be working with same-sex experimenters. This experimental design was selected since opposite-sex subject-experimenter pairings have been shown to produce significantly more spontaneous electrodermal activity than do same-sex pairings (Fisher & Kotses, 1974).

Third, subjects were told that the pre-session telephone call was made in order to give them ample time to think of a dream and emotional experiences that they could then describe during the experiment, rather than be required to produce one after they had arrived. Such a pre-briefing was designed to reduce the subjects' experience of negative evaluation by the experimenters that could result from the subjects' uncertainty of the unrehearsed, immediate selection and recall of previous events. This experience of negative evaluation during experiments has been shown to cause significant finger-pulse volume constriction (sympathetic activation) by Smith, Houston, and Zurawski (1984).

Fourth, subjects were asked if they could recall specifically a nightmare, strange or disturbing dream, or recurrent dream. Subjectively distressful dreams such as these were requested since, according to Freud (1900/1953), they are viewed to be more drive gratifying.

Finally, the subjects' verbal descriptions, while of central importance to the present investigation, were de-emphasized in the presentation of the study to subjects. Attention was diverted, instead, to the psychophysiological concomitants of dreams. This diversion of attention was designed to shift the subject's perceptions of the present study away from "dream interpretation" which could result in an increase in censorship of drive-laden thought or disclosure.

Upon arrival at their designated appointment, subjects were seated in a recliner by two experimenters (the interviewer and polygraph operator) in a room insulated against outside sound. They received a brief explanation of the ANS measures while the electrodes and oncometer cuff were attached. The experimenters chatted in a manner designed to put the subjects at ease until the subjects' ANS levels were stable. At this time each subject was asked to close his/her eyes and the baseline period was administered.

Free imagery (baseline): "Keeping your eyes closed, I would like you to describe any images or pictures you see in your mind's eye and also any feelings or bodily sensations that come to your attention. This will be for two minutes". Non-directive methods are used in Emergent Uncovering Psychotherapy (EUP) (Reyher, 1988) to probe "disturbances" in the flow of mentation and behavior during the unstructured context of spontaneous mentation. This allows facets of an intensifying repressed sexual wish to find increasingly blatant (transparent) depiction in awareness. Although uncovering was not expected in the mentation of volunteer subjects (Morishige & Reyher, 1975), the use of free imagery and non-directive probes activates unconscious fantasies, nonetheless. As in dreams, punishment results if the distortion of the derivatives in free imagery is insufficient. The blatancy of depiction of derivatives is in constant fluctuation

and is a function of the dynamic balance between libinal intensity and prohibition (Freud, 1915/1957).

Although the focus in the present study was primarily on the description of visual imagery, EUP consistently documents that an unconscious wish may also be propagated in several other domains (including somatic) as it moves toward gratification in its traverse of the psychic apparatus (Freud, 1900/1953). Paying attention to bodily cues has also been shown to increase the individual's subjective awareness of objective physiological arousal (Korff & Geer, 1983), as well as facilitate the level of physiological arousal (Lang, 1979, 1984).

Subjects typically complied with the experimenters' instructions and reported mentation (and/or somatic symptoms) for the duration of the two-minute free imagery periods. Sometimes during a given condition, however, subjects were less forthcoming and would fall silent after talking for a portion of the time period (eg., after one minute). In this case, a verbal prompt was made. If anyone stopped talking for 30 seconds, the experimenter would state "You still have some time left" in order to remind the subject to continue reporting his or her mentation. Only one prompt was allowed per free imagery period.

Experimental conditions: The five imagery conditions (dream revisualization, and the four contrast conditions: sex, fear, pain, and food consumption) were partially counterbalanced (Underwood, 1949) with each followed by a two-minute period of free imagery.

Dream revisualization:, "Keeping your eyes closed, describe a disturbing dream that you have had. So that I can better understand why it was so disturbing, describe everything you remember in the dream and how you felt. Please describe this in detail".

Contrast condition: (e.g., fear) "Keeping your eyes closed, describe a very frightening experience that you have endured. So that I can better understand why it was so frightening, describe the incident and how you felt. Please describe this in detail". Subjects were requested to describe not only the immediate stimuli of the recalled event but to also give an account of their personal response to it, since this has been shown to facilitate more ANS activation during affective imagery (Lang, 1979, 1984; Dekker & Everead, 1988; Baur & Craighead, 1979; Carroll, Marzillier & Merian, 1982).

RESULTS AND DISCUSSION

This section first presents inter-scorer reliabilities for scoring the various dependent measures in the subjects' verbal narratives. Next, a preliminary analysis of the TOD findings, within and across conditions, is presented. Also included is a critical evaluation of the viability of each of the ANS measures used in the study. Then the experimental hypotheses are each addressed, followed by other unplanned findings of relevant gender differences.

Inter-Scorer Reliability

Episodes. The subjects' reported mentation was marked off for episodes by two pairs, or teams, of undergraduate psychology-student scorers. One scorer was common to both teams. Team A scored all experimental conditions and free imagery periods for 50 subjects and Team B scored the same for the other 25 subjects (total: 75). Within each team, the episodes were first scored separately by both scorers, and if not in agreement, text was marked off for episodes by mutual decision. Reliability was established for each team. Within each team, the number of episodes for each subject which was initially marked off separately by the two scorers was correlated using the Spearman Rank Order Correlation Coefficient in order to obtain a reliability measure for each condition. Reliability for each team is presented in Table 1.

Insert Table 1 about here

Reliability was acceptable for all conditions except for the Fear condition in both teams of scorers (.52 and .47 for teams A and B). Therefore, the primary investigator and another MSU Clinical Psychology

Table 1
Inter-Scorer Reliability^a for Episodes

Condition	Team A	Team B
Baseline Free Imagery	.96	.95
Dream	.74	.77
Free imagery	.91	.91
Fear	.52 ^b	.47 ^b
Free Imagery	.75	.91
Pain	.92	.88
Free Imagery	.90	.82
Sex	.83	.90
Free Imagery	.86	.94
Meal	.91	.90
Free Imagery	.76	.90

N = 75. ^aReliability based on Spearman Rank Correlation Coefficient.

^bLow reliability for both teams of scorers.

graduate student scored episodes for the Fear condition in all subjects ($n = 75$), and obtained a reliability coefficient of .98. Their mutually-agreed upon scored episodes were then correlated with their counterpart for Teams A and B ($n = 75$) for an acceptable reliability coefficient of .96.

The reason for the anomalously low reliability scores in the Fear condition is presently unclear. The low scores appear to have resulted from the scored episodes of the common member in Teams A and B, since the Fear condition reliability scores were low in both teams. A follow-up inspection of the data indicates that this particular scorer underestimated the number of episodes for some subjects in both teams.

TOD score. For each subject, episodes were partitioned into quartiles and waypoints assigned mean quartile scores for all subjects in each condition and free imagery period. The primary investigator scored the verbal protocols for waypoints in all conditions for all subjects. An undergraduate psychology research assistant, who was well trained and experienced with the TOD scoring system but blind to the experimental hypotheses, did the same for a randomly selected sample of 25 subjects. The waypoints were ranked for each condition in terms of their mean quartile values. The two sets of rankings were then correlated using the Spearman Rank Correlation Coefficient. These reliability coefficients were acceptable and ranged from .76 (Sex) to .93 (Meal). (see Table 2)

Insert Table 2 about here

Waypoints. After the rank order for waypoints was shown to be reliable for each condition, an additional comparison was made between each

Table 2
Inter-Scorer Reliability^a for TOD Sequence

Condition	r
Baseline-free imagery	.76
Dream	.91
Free imagery	.78
Fear	.86
Free imagery	.81
Pain	.89
Free imagery	.71
Sex	.76
Free imagery	.73
Meal	.93
Free imagery	.74

n = 25. ^aReliability based on Spearman Rank Order Correlation Coefficient

waypoint scored by each scorer. Reliability for waypoints was determined episode to episode by the mean percentage of agreement between scorers. The agreed upon scores ("hits") were divided by the total number of scores (including all "hits" and "misses"). Overall, the reliability percentage scores were acceptable and ranged from 46% (Drive Intensification - I in the Meal condition) to 100% (Drive Intensification - II in the Baseline-free imagery period) (see Table 3). The combined mean reliability scores for the eleven periods of observation ranged from 63% (Prohibition) to 87% (Drive Intensification - II).

Insert Table 3 about here

Castration. This measure was determined by the actual number of punishment/castration derivatives reported in a given narrative. As can also be seen in Table 3, the mean percentage agreement scores for castration waypoints were acceptable and ranged from 64% in the Meal condition to 94% in the Sex-free imagery period, with a combined mean score of 84% for the eleven periods of observation.

Somatic symptoms. In the free imagery periods subjects were explicitly instructed to report any somatic sensations that they became aware of during spontaneous mentation. In the experimental conditions they were not instructed to provide such reports and their unsolicited symptoms were too few for statistical analysis. Therefore, only those expressed during the free imagery were evaluated. These, too, were evaluated episode to episode by mean percentage agreement and reliability scores were acceptable; for the Baseline-, Dream-, Fear-, Pain-, Sex-, and Meal-free imagery periods these

Table 3

Episode by Episode Inter-Scorer Reliability^a for TOD Waypoints

	Tum	DI-I	Dang	Pen	Cop	Pro	Cast	DI-II	Org	Det
BL	77	88	78	85	89	55	91	100	94	65
DR^b	81	54	51	76	73	59	82	83	87	90
FI^b	67	83	85	83	81	82	89	92	84	84
FR	78	54	64	57	61	57	82	64	72	74
FI	84	59	62	81	89	67	81	96	77	81
PN	71	62	61	70	69	61	82	75	62	77
FI	58	68	93	66	87	52	82	83	77	89
S X	62	53	79	76	86	71	93	83	72	64
FI	77	71	68	74	79	56	94	95	87	75
ML	75	46	82	83	95	70	64	95	74	84
FI	76	87	88	75	73	64	88	94	93	84
MC^c	73	66	74	75	80	63	84	87	80	79

Note. (Waypoints) Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Pen = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm, Det = Detumescence, (Conditions) BL = Baseline, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery.

^aValues are in mean percent agreement using a sample of 25 subjects.

^bThe Dream condition / Dream-free imagery included Personification with mean percent agreements of 79 and 82, respectively. ^cCombined mean.

were 87, 83, 92, 87, 83, and 79%, respectively (a combined mean score of 85%).

Preliminary Analyses

Verbal Narratives

To assess the feasibility of testing the experimental hypotheses, the degree to which the TOD sequence characterizes the various data sets had to be determined. Heretofore, only written dream reports had been examined (Reyher, 1982, 1988). Would the revisualization and recall of a dream also be organized by TOD? Would this also be the case for the other data sets (imagery conditions)? On Reyher's account (1988), all mentation is organized by TOD; it is ubiquitous. Sample verbatim protocols scored for TOD from each treatment condition and paired free imagery period are displayed in Appendix C.

Replication (Corroboration) of TOD Sequence

The rank order of the mean quartile scores for waypoints in each condition was correlated with the progression of waypoints in the TOD sequence (Reyher, 1988), using the Spearman Rank Correlation Coefficient. The obtained coefficient is that condition's "TOD score".

Dream condition. The obtained correlation for the Dream condition was .88. As was expected, each waypoint was not employed in every dream report (see Table 4). This is explained on Reyher's (1988) account of TOD; a repressed sexual wish is an integral aspect of the unconscious fantasy which provides a template for mentation (mentation includes imagistic, verbal/discursive, somatic, and affective modes of representation). This template propagates itself in whatever modes are most propitious for its completion/gratification (traverse of the psychic apparatus). Consequently, not only is the scoring system incomplete for apprehending all waypoints, but

some waypoints (derivatives) are subject to repression. The waypoints selected varies from subject to subject and within subjects over time.

Insert Table 4 about here

Non-dream contrast conditions. The report of a frightening experience had nearly as high a TOD score (.87) as the frightening dream. The scores for the report of a satisfying sexual experience (.80) and physically painful experience (.75) also indicated the advancement of TOD. The report of eating a delicious meal appeared to be the least drive-gratifying of the experimental conditions, receiving an unexpected low TOD Score of .52. This finding is anomalous, since Freud (1916-17/1963, p. 314) viewed the oral gratification obtained by taking in nourishment to be a prototype in the development of all subsequent drives. Despite the variation, all of the experimental conditions were shown to contain considerable advancement of repressed sexual wishes, which is consistent with Freud's (1905/1953) contention that all mentation, if sufficiently exciting, can become libidinized. (see Tables 5 - 8)

Insert Tables 5 - 8 about here

Free imagery periods. Although lower than their condition counterparts, the free imagery periods were significant with respect to TOD (see Figure 1). Nevertheless, the expected decrease in TOD scores from the preceding experimental conditions was present in four of the five periods (see the "venting" effect in Hypothesis 3) Once again, the Meal-free imagery was anomalous; it increased following the Meal narrative.

Table 4

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Dream Condition^a

TOD sequence			Dream condition sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	N ^c
1. Tum	1.48	.23	1. Tum	2.00	.58	64
2. DI - I	1.96	.19	2. DI - I	2.17	.73	57
3. Dang	2.00	.28	3. Dang	2.25	.63	65
4. Pers	2.12	.35	### 4. Pro	2.26	.52	68
5. Penet	2.14	.33	5. Penet	2.28	.79	51
6. Cop	2.33	.25	6. Cop	2.30	.79	56
7. Pro	2.55	.36	### 7. Pers	2.43	.60	49
8. Cast	2.75	.42	8. Cast	2.57	.98	52
9. DI - II	3.06	.24	# 9. Org	2.89	.79	47
10. Org	3.13	.36	# 10. DI - II	3.27	.70	29

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Pers = Personification, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 71 (Four reports had less than two episodes and could not be scored for TOD). ^bTOD score = .88. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Table 5

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Fear Condition^a

TOD sequence			Fear condition sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	n ^c
1. Tum	1.48	.23	1. Tum	1.98	.62	71
2. DI - I	1.96	.19	2. DI - I	1.99	.62	67
3. Dang	2.00	.28	# 3. Penet	2.04	.77	72
4. Penet	2.14	.33	# 4. Cop	2.07	.83	61
5. Cop	2.33	.25	## 5. Dang	2.40	.56	74
6. Pro	2.55	.36	# 6. Cast	2.44	.75	55
7. Cast	2.75	.42	## 7. Org	2.45	.75	59
8. DI - II	3.06	.24	## 8. Pro	2.48	.59	74
9. Org	3.13	.36	# 9. DI - II	2.86	.75	48

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 74 (One report had less than two episodes and could not be scored for TOD). ^bTOD score = .87. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Table 6

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Pain Condition^a

TOD sequence			Pain condition sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	n ^c
1. Tum	1.48	.23	# 1. DI - I	1.71	.81	64
2. DI - I	1.96	.19	### 2. Cop	1.88	.77	66
3. Dang	2.00	.28	## 3. Tum	1.91	.62	70
4. Penet	2.14	.33	4. Penet	1.97	.79	59
5. Cop	2.33	.25	## 5. Dang	1.99	.87	45
6. Pro	2.55	.36	### 6. Org	2.23	.79	63
7. Cast	2.75	.42	# 7. Pro	2.35	.64	74
8. DI - II	3.06	.24	# 8. Cast	2.55	.56	73
9. Org	3.13	.36	# 9. DI - II	2.70	.76	39

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 74 (One report had less than two episodes and could not be scored for TOD). ^bTOD score = .75. ^cnumber of subjects using waypoint..

The number of #s indicates the number of positions out of TOD rank order.

Table 7

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Sex Condition^a

TOD sequence			Sex condition sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	n ^c
1. Tum	1.48	.23	1. Tum	2.17	.71	58
2. DI - I	1.96	.19	# 2. Dang	2.20	1.12	24
3. Dang	2.00	.28	# 3. Penet	2.27	.74	58
4. Penet	2.14	.33	## 4. Pro	2.28	.73	58
5. Cop	2.33	.25	5. Cop	2.29	.72	58
6. Pro	2.55	.36	#### 6. DI - I	2.42	1.01	53
7. Cast	2.75	.42	7. Cast	2.97	1.06	13
8. DI - II	3.06	.24	# 8. Org	3.16	.88	29
9. Org	3.13	.36	# 9. DI - II	3.22	.73	27

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 64 (Eleven reports had less than two episodes and could not be scored for TOD). ^bTOD score = .80. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Table 8

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Meal Condition^a

TOD sequence			Meal condition sequence ^b				
Waypoint	M	SD		Waypoint	M	SD	n ^c
1. Tum	1.48	.23	#####	1. Cast	2.09	1.00	34
2. DI - I	1.96	.19	#	2. Tum	2.17	.48	70
3. Dang	2.00	.28	#	3. Penet	2.24	.81	55
4. Penet	2.14	.33	#	4. Dang	2.30	.84	5
5. Cop	2.33	.25		5. Cop	2.44	.88	48
6. Pro	2.55	.36	####	6. DI - I	2.45	.98	55
7. Cast	2.75	.42	#	7. Pro	2.70	.83	53
8. DI - II	3.06	.24	#	8. Org	2.83	.89	24
9. Org	3.13	.36	#	9. DI - II	3.36	.60	13

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 69 (Six reports had less than two episodes and could not be scored for TOD). ^bTOD score = .63. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Insert Figure 1 about here

The high TOD score (.73) for the Baseline-free imagery was also unexpected in view of its occurrence during the beginning of the experimental procedures and the prominence of anxiety (self-preservative instincts). The Sex-, Fear-, Dream-, and Pain-free imagery periods decreased to .42, .50, .70, and .70, respectively, from the preceding experimental conditions. The Meal-free imagery period was the exception to this pattern; it increased to .76 from the relatively low TOD score (.52) obtained for the Meal narrative (see Tables 9 - 14).

Insert Tables 9 - 14 about here

Assessment of Generality.

Intraclass correlation is an index of commonality across comparable data sets, however, its nonparametric equivalent, Kendall's coefficient of concordance (Kendall, 1948) was employed. It was performed on the waypoint sequence in the five experimental conditions, and the results were significant, $W = .67$ ($df = 8$), $p < .001$. The homogeneity of rank orders among conditions justifies Reyher's claims for the generality of TOD.

The Kendall coefficient of concordance reveals that the TOD sequence was also present in the five post-free imagery periods, $W = .52$ ($df = 8$), $p < .01$. Although lower than that obtained in the experimental conditions, this significant outcome reinforces the claimed generalization that TOD organizes all mentation.

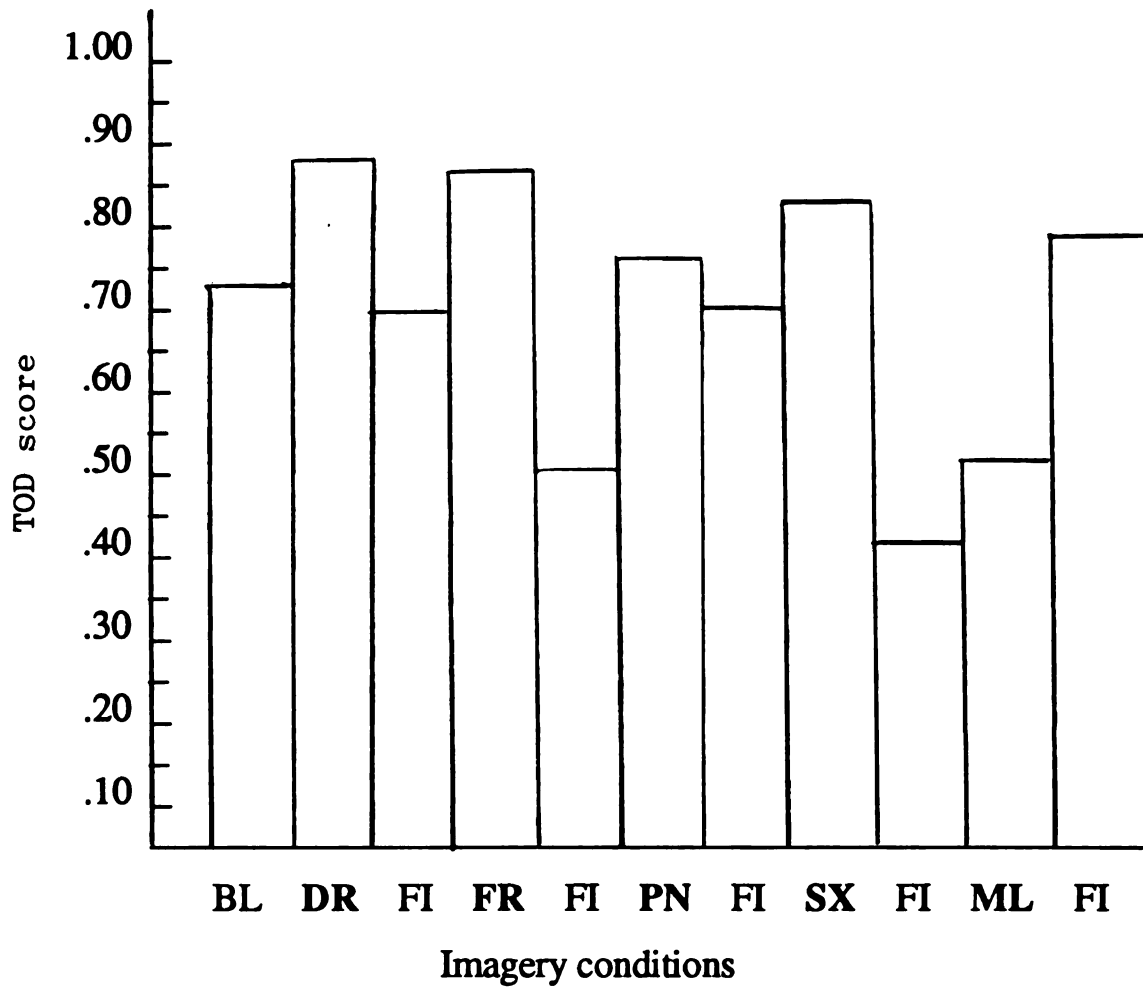


Figure 1. Comparison of TOD Scores Among Experimental Conditions and Their Paired Post-Free Imagery Periods

(BL = Baseline-free imagery, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery. The $\bar{n}$ for all conditions is less than the total since some reports have less than two episodes and cannot be scored for TOD.)

Table 9

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Baseline-Free Imagery^a

TOD sequence			Baseline-free imagery sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	n ^c
1. Tum	1.48	.23	# 1. DI - I	2.09	.95	21
2. DI - I	1.96	.19	# 2. Dang	2.14	1.04	18
3. Dang	2.00	.28	## 3. Cop	2.19	.76	28
4. Penet	2.14	.33	## 4. Pro	2.27	.78	31
5. Cop	2.33	.25	#### 5. Tum	2.31	.71	37
6. Pro	2.55	.36	## 6. Penet	2.34	.85	22
7. Cast	2.75	.42	7. Cast	2.38	1.27	15
8. DI - II	3.06	.24	# 8. Org	2.44	.90	11
9. Org	3.13	.36	# 9. DI - II	2.83	.76	3

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 43 (Thirty-two reports had less than two episodes and could not be scored for TOD). ^bTOD score = .73. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Table 10

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Dream-Free Imagery^a

TOD sequence			Dream-free imagery sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	n ^c
1. Tum	1.48	.23	1. Tum	2.14	.73	53
2. DI - I	1.96	.19	# 2. Dang	2.22	.97	31
3. Dang	2.00	.28	# 3. Pers	2.32	1.13	20
4. Pers	2.12	.35	### 4. Pro	2.37	.83	49
5. Penet	2.14	.33	### 5. DI - I	2.44	1.00	32
6. Cop	2.33	.25	#### 6. Org	2.52	.91	27
7. Pro	2.55	.36	# 7. Cop	2.53	1.04	28
8. Cast	2.75	.42	### 8. Penet	2.54	.95	31
9. DI - II	3.06	.24	9. DI - II	2.62	.55	9
10. Org	3.13	.36	## 10. Cast	2.79	1.04	29

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Pers = Personification, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 55 (Twenty reports had less than two episodes and could not be scored for TOD). ^bTOD score = .70. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Table 11

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Fear-Free Imagery^a

TOD sequence			Fear-free imagery sequence ^b				
Waypoint	M	SD		Waypoint	M	SD	n ^c
1. Tum	1.48	.23	##	1. Dang	1.91	.90	38
2. DI - I	1.96	.19		2. DI - I	2.16	.93	39
3. Dang	2.00	.28	##	3. Cop	2.17	.92	34
4. Penet	2.14	.33	###	4. Cast	2.24	.87	32
5. Cop	2.33	.25	#	5. Pro	2.28	.77	51
6. Pro	2.55	.36	##	6. Penet	2.30	1.02	35
7. Cast	2.75	.42	#####	7. Tum	2.31	.80	56
8. DI - II	3.06	.24	#	8. Org	2.51	.91	36
9. Org	3.13	.36	#	9. DI - II	2.56	.66	10

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 59 (Sixteen reports had less than two episodes and could not be scored for TOD). ^bTOD score = .50. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Table 12

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Pain-Free Imagery^a

TOD sequence			Pain-free imagery sequence ^b				
Waypoint	M	SD		Waypoint	M	SD	n ^c
1. Tum	1.48	.23	####	1. Cop	1.84	.80	40
2. DI - I	1.96	.19		2. DI - I	2.10	1.08	44
3. Dang	2.00	.28	##	3. Tum	2.20	.78	58
4. Penet	2.14	.33		4. Penet	2.26	.98	37
5. Cop	2.33	.25	#	5. Pro	2.29	.80	53
6. Pro	2.55	.36	###	6. Dang	2.30	1.09	25
7. Cast	2.75	.42	##	7. Org	2.32	.87	32
8. DI - II	3.06	.24	#	8. Cast	2.38	.83	42
9. Org	3.13	.36	#	9. DI - II	2.95	.88	14

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 60 (Fifteen reports had less than two episodes and could not be scored for TOD). ^bTOD score = .70. ^cnumber of subjects using waypoint..

The number of #s indicates the number of positions out of TOD rank order.

Table 13

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Sex-Free Imagery^a

TOD sequence			Sex-free imagery sequence ^b				
Waypoint	M	SD		Waypoint	M	SD	n ^c
1. Tum	1.48	.23	#####	1. Cast	2.04	.96	21
2. DI - I	1.96	.19	#	2. Tum	2.08	.77	60
3. Dang	2.00	.28	###	3. Pro	2.11	1.24	61
4. Penet	2.14	.33	##	4. DI - I	2.15	.89	38
5. Cop	2.33	.25		5. Cop	2.30	1.03	37
6. Pro	2.55	.36	###	6. Dang	2.48	.90	24
7. Cast	2.75	.42	###	7. Penet	2.50	1.12	29
8. DI - II	3.06	.24	#	8. Org	2.53	.90	20
9. Org	3.13	.36	#	9. DI - II	2.85	.94	10

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 62 (Thirteen reports had less than two episodes and could not be scored for TOD). ^bTOD score = .42. ^cnumber of subjects using waypoint..

The number of #s indicates the number of positions out of TOD rank order.

Table 14.

Comparison of Quartile Means and Standard Deviations Between Waypoint Sequence for TOD and Waypoint Sequence for Meal-Free Imagery^a

TOD sequence			Meal-free imagery sequence ^b			
Waypoint	M	SD	Waypoint	M	SD	n ^c
1. Tum	1.48	.23	# 1. DI - I	2.03	.98	36
2. DI - I	1.96	.19	## 2. Penet	2.10	.78	32
3. Dang	2.00	.28	## 3. Cop	2.11	.89	40
4. Penet	2.14	.33	# 4. Dang	2.20	1.16	9
5. Cop	2.33	.25	#### 5. Tum	2.24	.68	52
6. Pro	2.55	.36	6. Pro	2.38	.80	44
7. Cast	2.75	.42	7. Cast	2.39	1.00	26
8. DI - II	3.06	.24	# 8. Org	2.44	1.12	19
9. Org	3.13	.36	# 9. DI - II	3.00	1.05	6

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aN = 56 (Nineteen reports had less than two episodes and could not be scored for TOD). ^bTOD score = .71. ^cnumber of subjects using waypoint.

The number of #s indicates the number of positions out of TOD rank order.

Relation of Present TOD Sequence to Original.

Tables 4 through 14 (all eleven observation periods) reveal that Reyher's (1982) original TOD sequence has greater range than the sequence provided by the present, more comprehensive version based on his more recent scales (1991). Tumescence is lower and Orgasm (TOD's terminus) is higher than the terminus (DI - II) of the present TOD scale. Thus, the beginning and end of the original TOD sequence are more widely separated, thereby allowing greater differentiation between the intervening waypoints; they are more "spread out". Superior differentiation is also evident in smaller waypoint variability.

Which of the modestly different orders of waypoints is closer to the "true" or normative order? This question was addressed by determining the direction of the shift in TOD score (correlation), using a more stable (aggregated) estimate of TOD, based on all five conditions. If this combined sequence of waypoints provided a lower TOD score, the present TOD scale could be considered as the better estimate of the "true" or normative sequence. The waypoint sequence for each of the five experimental conditions were combined through weighted Ms, and the aggregated correlation was .93 (see Table 15), an increase in score over each of the experimental conditions. This shift is towards the original sequence rather than away from it. Thus, on both accounts, the original sequence remains the best estimate of the "true" or normative TOD sequence.

Insert Table 15 about here

Although a comparable analysis of the free imagery periods lacks a justifying rationale (sexual arousal occurs during REM dream sleep and

Table 15

Comparison of Weighted Quartile Means Between Waypoint Sequence for Combined Experimental Conditions and Combined Free Imagery Periods

TOD	Combined experimental condition sequence^a			Combined free imagery sequence^b		
Waypoint	Waypoint	M	SD	Waypoint	M	SD
1. Tum	Tum	2.04	.60	#### Cop	2.16	.92
2. DI-I	DI-I	2.13	.83	DI-I	2.17	.97
3. Dang	# Penet	2.15	.77	Dang	2.19	.96
4. Penet	# Cop	2.18	.79	### Tum	2.20	.75
5. Cop	## Dang	2.24	.73	# Pro	2.28	.92
6. Pro	Pro	2.41	.73	## Penet	2.33	.96
7. Cast	Cast	2.48	.81	Cast	2.38	.92
8. DI-II	# Org	2.61	.80	# Org	2.46	.92
9. Org	# DI-II	3.00	.66	# DI-II	2.80	.79

Note. Tum = Tumescence, DI-I = Drive Intensification-I, Dang = Danger, Penet = Penetration, Cop = Copulation, Pro = Prohibition, Cast = Castration, DI-II = Drive Intensification-II, Org = Orgasm

^aTOD score = .93. ^bTOD score = .73

The number of #s indicates the number of positions out of TOD rank order.

Reyher only examined dream protocols), and is confounded by differential venting effects (see Hypothesis 3), it was performed anyway. The obtained TOD score was .73 (see Table 15). This aggregated score was an increase over the scores of the Dream-, Fear-, Pain-, and Sex-free imagery periods, no different from the Baseline-free imagery (also .73), and a slight decrease from the Meal-free imagery (.76). Overall, these shifts favor the original TOD sequence.

Waypoint Descrepancies

Some of the discrepancies between the two TOD scales may have been produced by the specific nature of the narratives recounted. A greater incidence of episodes containing putative castration derivatives may very well be found in the Pain and Fear conditions, since these necessarily constitute the content of these narratives. Conversely, the Sex narrative was not explicitly genital for the majority of subjects, which thereby precluded the explicit completion of TOD. It would have to be completed indirectly, by derivatives in the several modes of representation. Consequently, the Dream condition is most directly comparable to the original TOD sequence.

Dream condition. An examination of the waypoints for the two investigations (see Table 4) reveals three changes in rank after the third ranked position, two of which were three rank positions apart. The Personification (4th) and Prohibition (7th) waypoints were transposed in relation the TOD sequence. Drive Intensification II (9th) and Orgasm (10th), the last two waypoints in the sequence, were also transposed. More than likely, these transpositions were due to differences between the original version of the TOD scale and its current state of development.

Non-dream contrast conditions. In addition to differences between TOD scales, these also reflect the specific constraints imposed by the several

conditions. These two sources of deviation can be separated by discounting the waypoint transpositions in the dream condition, and taking note of new ones for each condition. Special constraints notwithstanding, note that the TOD sequence remained essentially intact (see Tables 5 - 8). Each condition apparently was organized by TOD.

Waypoints which deviate the most from the expected rank order include Castration (7th) in the Meal condition (Table 8), which occurs too early, in the first position in the sequence (six positions out of rank order). Drive Intensification - I (2nd), was delayed in both of the positive or "pleasurable" conditions, Sex and Meal (Tables 7 and 8), occurring too late in the sequence (four positions out of rank order).

Drive Intensification - II (9th) was in the final position and (one position) out of rank order across all experimental conditions (dream and non-dream), usually transposed with Orgasm (10th). The transposed order of these two waypoints was reliably scored by both scorers, suggesting that the accepted scoring criteria may have drifted from Reyher's original TOD scoring system. Two possible reasons are considered: First, the criteria for Orgasm differed from Drive Intensification - II in that it included more verbal (remote) derivatives which can occur throughout a protocol, thus "bringing down" the mean quartile value. Second, the criteria for Drive Intensification - II consists of an additional increase in energy/activity beyond some previous increase, whereas Orgasm consists of a similar, but more brief, focused discharge. Some of the Drive Intensification - II waypoints scored in the fourth quartiles may have actually been Orgasm derivatives.

Free imagery periods. The waypoint discrepancies have implications aside from evaluating the venting effect (Hypothesis 3) because they may reveal whether the preceding condition has "carry-over" effects; that is, the

TOD sequence may still be moving toward completion and/or the preceding narrative is providing derivatives (day residue) for a new TOD sequence.

Compared to the experimental conditions, the lower TOD scores in the Baseline- and five post-free imagery periods means more out of rank order waypoints (see Tables 9 - 14). Deviations which are most pronounced include Tumescence (1st) in the Fear-free imagery period (Table 11) which occurs too late, near the end of the sequence (six positions out of rank order). On Reyher's account of TOD, this means that the treatment conditions varied in degree of TOD completion, and whether aversive excitement was present as a vehicle (waypoint) for enabling TOD and maximizing gratification.

Castration (7th) in the Sex-free imagery period (Table 13) can also be regarded as anomalous. It occurred too early, in the first position in the sequence (six places out of rank order). However, this may be consistent with the possibility that unconscious incestuous fantasies found too blatant expression in the report of actual sexually-arousing experiences (Sex condition). Subsequently, this incited an unconscious self-punitive retaliation, and derivatives of injury and damage were among the first words uttered by subjects after vividly imagining and describing the sex.

Autonomic Nervous System Measures.

Ensuring a fair test of the experimental hypotheses entails an examination of group contrasts and correlational analyses.

Between Group Contrasts - Conditions

Figures 2 - 6 display the medians for all ANS measures, SCR, SCL, HR, PV, and BV (except SR), with respect to each experimental condition. SR displayed too little variation; the majority of observations was the midpoint (3) of the scale.

Insert Figures 2 - 6 about here

A Friedman two-way analysis of variance was performed on all six ANS measures between the experimental conditions and none were significant with the exception of SR, $p < .0001$. Only the Meal contributed to the overall significance. The same test was applied to the post-free imagery periods and none were significant, but SR approached significance, $p < .07$. Again, only the Meal contributed to this outcome, which is consistent with the notion that there is a carry-over effect. This, however, does not necessarily imply that there were carry-over effects from the other conditions to their paired post-free imagery periods. Because only one pair of conditions (Meal/Meal-free imagery) contributed to these outcomes for SR, there is concern about its ability to be sensitive and consistent to the diverse requirements of the experimental hypotheses, and thereby, on its own provide a "fair" test.

Within-Group Contrasts.

Within-group comparisons were highly informative on the differentiating ability of the ANS measures. Each of the treatment conditions was compared with its paired post-free imagery period. Table 16 displays the findings of the Friedman two-way analysis of variance and it is clear that they are not equally differentiating or sensitive to differences in SNS activation. With respect to level of confidence, the rankings of most to least preferred is BV, HR, PV, SCR, SCL, and SR. SR failed to attain the .05 even once, and surprisingly, SCL only attained this level once. In contrast, SCR only failed once (Meal/Meal-free imagery = .10). Thus, there are two tiers of measures, one acceptable (BV, HR, PV, and SCR), and the other unacceptable (SCL

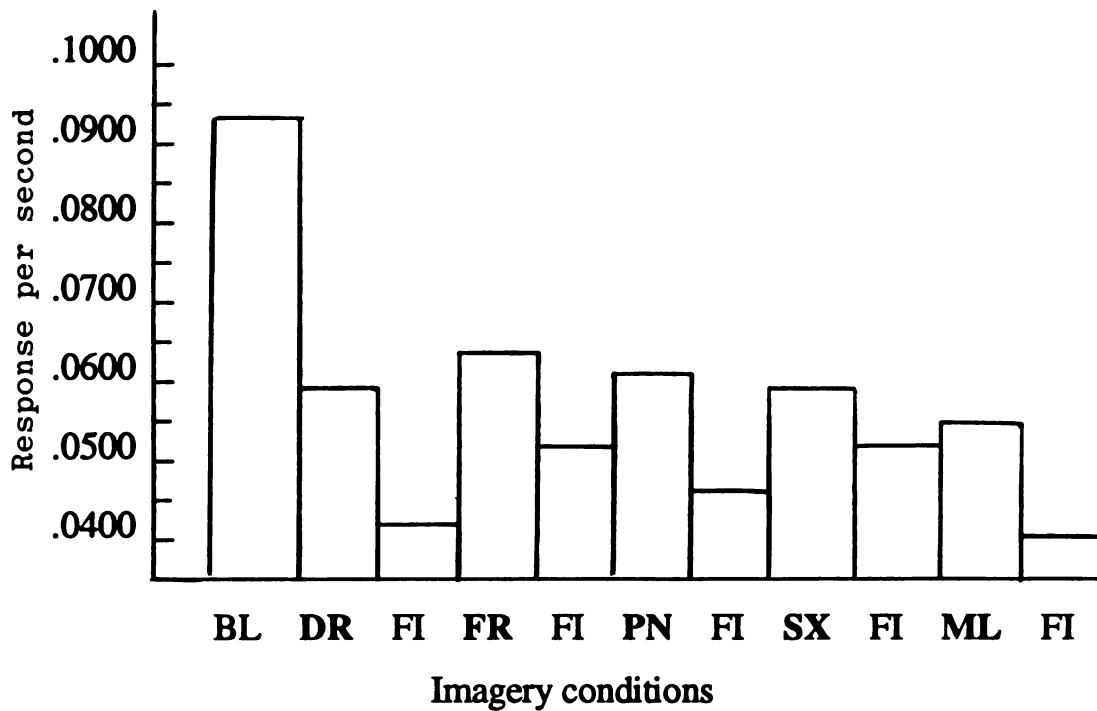


Figure 2. Comparison of Median Skin Conductance Response Rate Among Experimental Conditions and Their Paired Post-Free Imagery Periods (BL = Baseline-free imagery, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery. The n for all conditions is less than the total since some subjects were "non-responders" and did not have responses in each condition.)

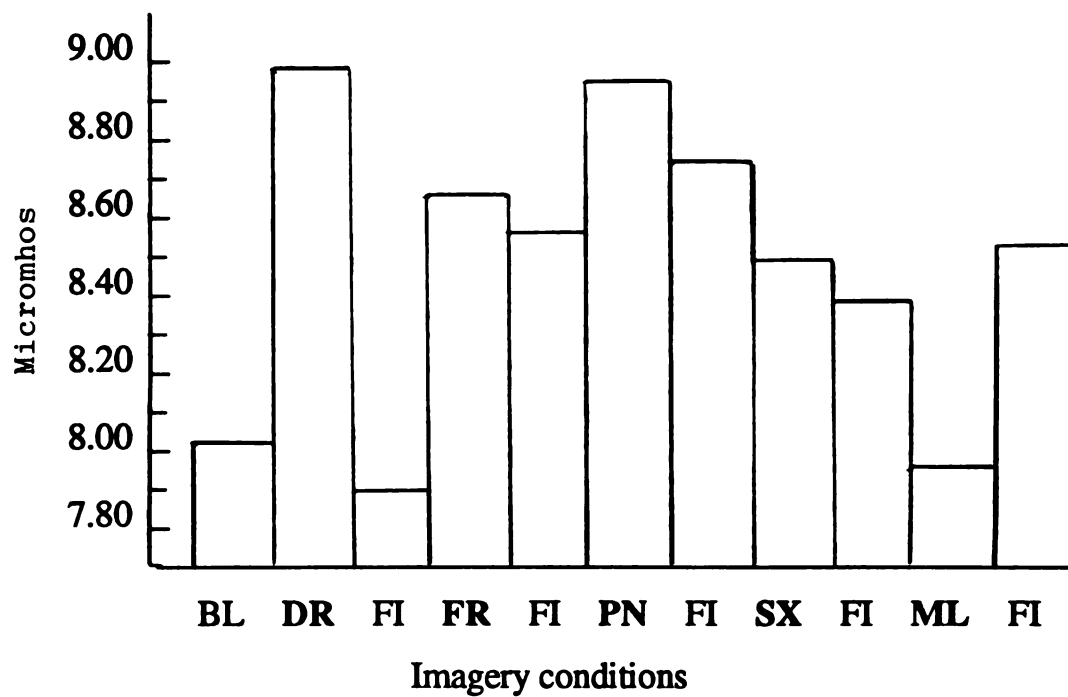


Figure 3. Comparison of Median Skin Conductance Level Among Experimental Conditions and Their Paired Post-Free Imagery Periods (BL = Baseline-free imagery, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery. $N = 75$.)

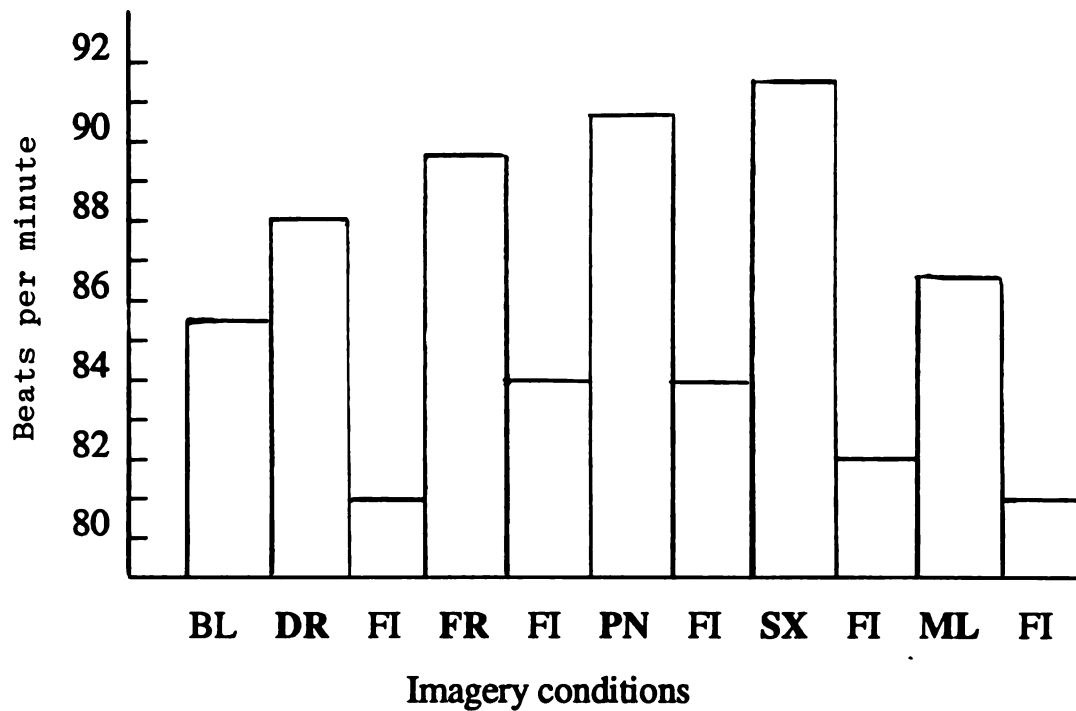


Figure 4. Comparison of Median Heart Rate Among Experimental Conditions and Their Paired Post-Free Imagery Periods^a

(BL = Baseline-free imagery, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery. The *ns* are for a partial number of subjects since scorable trace was not available in all conditions.)

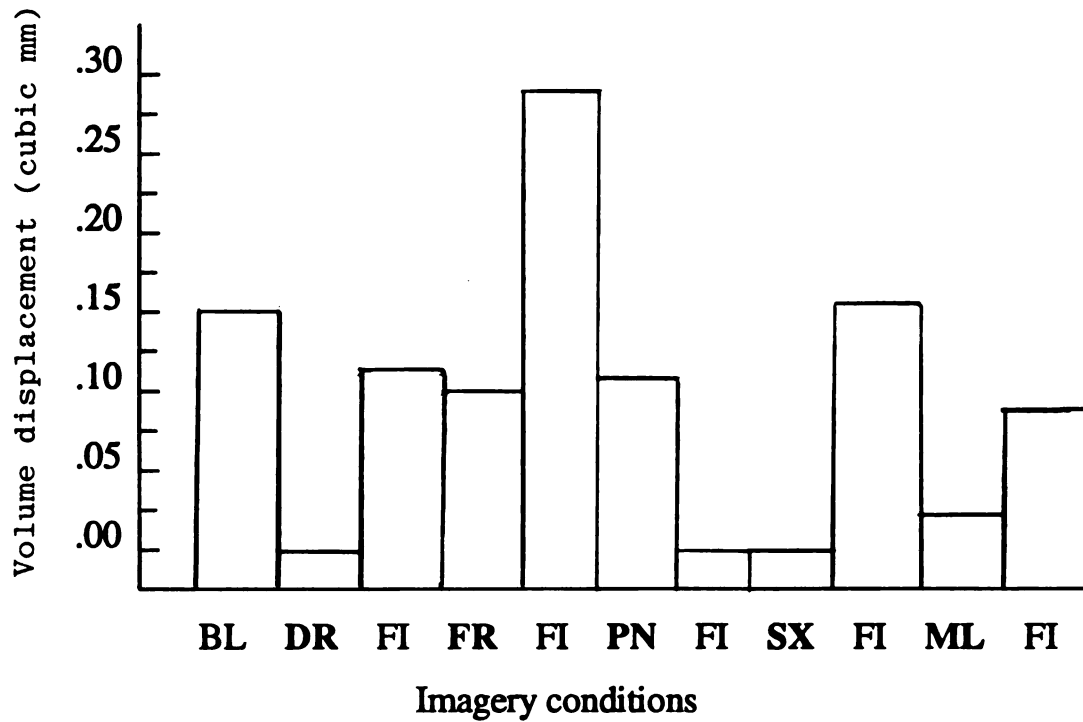


Figure 5. Comparison of Median Pulse Volume Among Experimental Conditions and Their Paired Post-Free Imagery Periods
(BL = Baseline-free imagery, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery. $N = 75$.)

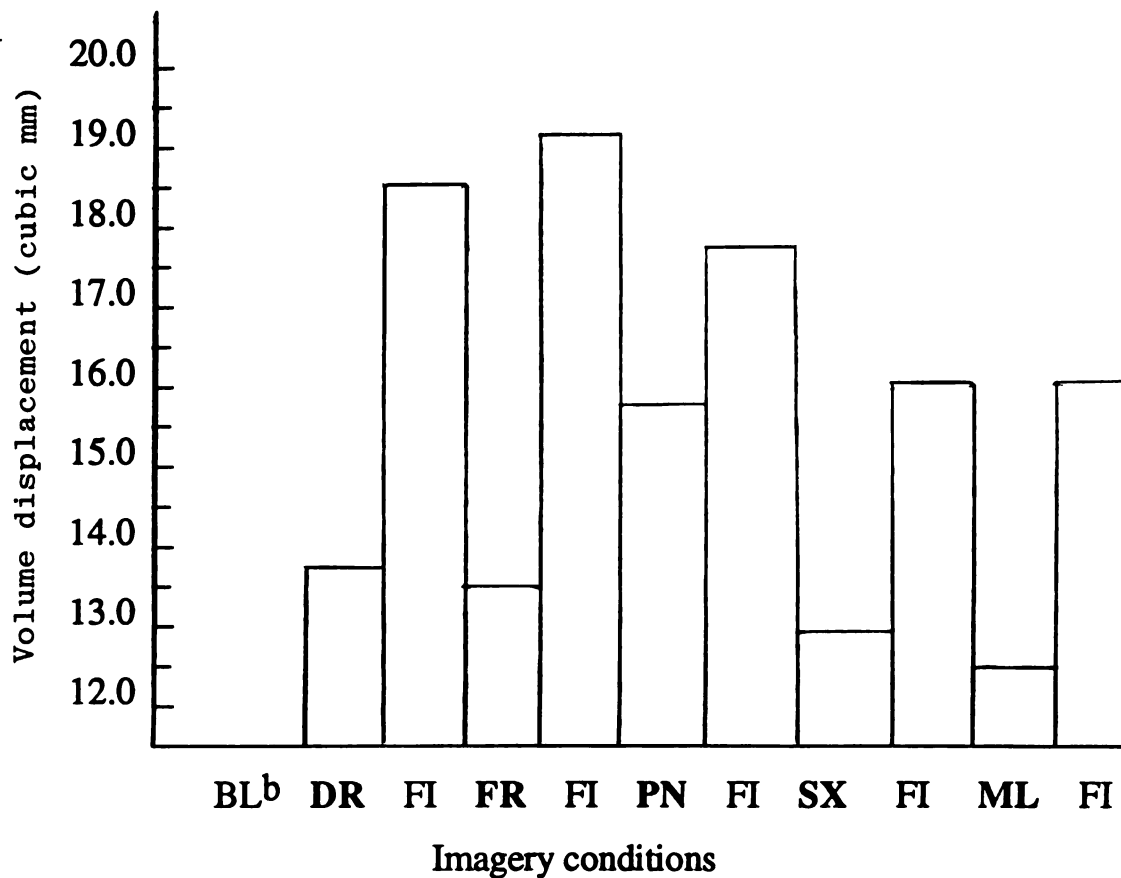


Figure 6. Comparison of Median Peripheral-Blood Volume Among Experimental Conditions and Their Paired Post-Free Imagery Periods (BL = Baseline-free imagery, DR = Dream, FR = Fear, PN = Pain, SX = Sex, ML = Meal, FI = Post-free imagery. $N = 75$. BL is not directly compared with the imagery conditions since it did not occur throughout the partially-counterbalanced order and vary in value due to order effects [habituation]. It occurred only in the first position of the sequence following the initial blood volume setting [0] and had a median value of -.35.)

and SR). Only the acceptable tier are candidates for providing a fair test of the hypotheses.

Insert Table 16 about here

Correlational Analyses

At least one ANS measure should be highly correlated with at least one other ANS measure over all periods of observation. Information on this requirement (the degree of homogeneity among the ANS measures) was provided by Kendall's coefficient of concordance. It was applied separately to median values for the set of five experimental conditions and to the set of their paired post-free imagery periods. As expected, the coefficient ($W = .10$) of the former was less than that ($W = .39$) of the latter. Accordingly, each of the experimental conditions presumably contributes unique variance which affects the five ANS measures differently. In contrast, the free imagery periods are more homogeneous; they have more shared variance.

For a measure to provide a fair test of the diverse experimental hypotheses, it should be sensitive and consistent in all eleven periods of observation (five treatment conditions, five post-free imagery periods, and baseline). If a given first tier measure, one that has already been shown to be sensitive to group median contrasts, is consistently and significantly correlated with another first tier measure, they bootstrap each other into candidacy for being the designated (nomothetic) critical variables - they show stimulus response specificity (Stern & Sison, 1990). Only one such pair emerged, one from the first tier (SCR) and one from the second tier (SCL). Tables 17 - 27 present the eleven matrices for the composite sample (males plus females).

Table 16

Differences^a in ANS Measures Between Each Experimental Condition and Its Paired Post-Free Imagery Period

Paired conditions	ANS measures					
	SCR	SCL	HR	PV	BV	SR
Dream/FI	.006	.08	.0002	.0008	.0000	.36 ^b
Fear/FI	.007	.73	.0000	.0008	.0000	.49
Pain/FI	.011	.02	.0000	.0647	.0000	.56
Sex/FI	.020	.08	.0001	.0018	.0000	.49 ^b
Meal/FI	.100	.64	.0000	.0209	.0000	.08

Note. FI = Free imagery period, (ANS measures) SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating

^aDifference values are based on significance levels for Friedman two-way analysis of variance. ^bAll differences are in the expected direction (decrease in sympathetic nervous system activation) except the SR measure in the Dream and Sex condition.

The line in the matrices sets off the ANS region. The correlation between them did not suffer vicissitudes of either direction of significance over the eleven periods of observation. The correlations ranged from .26 to .51.

Insert Tables 17 - 27 about here

Conclusion. SCR is preferred to SCL primarily because of its superior ability to differentiate the experimental conditions from their post-free imagery periods. In addition, no other pair of measures revealed such uniform and significant consistency in the eleven correlation matrices. This means the two measures were not subject to anomaly-creating sources of unique variance in any of the eleven periods of observation. Without SCL the consistency of SCR would be less apparent. Thus, the SCL measure provides the strap for bootstrapping the designation of SCR as the critical variable. The only caveat to designating SCR as the critical measure is the Meal condition which neither electrodermal measure succeeded in differentiating from the Meal-free imagery, albeit in the right direction. However, recall that the Meal condition and its associated free imagery were also the anomalous pair for TOD (a reversal of scores), suggesting a different relationship than those observed in the other pairs. Whatever the reason, the experimental hypotheses involving ANS effects (hypotheses 1,2,5, and 6) are minimally affected because Meal and Meal-free imagery is only one of five pairs of observation in the data set.

Although SCR was the designated dependent variable for evaluating the experimental hypotheses, SCL and the others will also be reported for their informative content.

Table 17

Correlation Matrix for Castration Derivatives and ANS Measures
for the Dream Condition

	Cast	SCR	SCL	HR	PV	BV
SCR	-.06 (70) ^a					
SCL	.05 (75)	.36 (70)				
HR	-.44 ** (37)	-.00 (34)	.01 (37)			
PV	-.00 (75)	.28 ** (70)	.27 ** (75)	-.01 (37)		
BV	.02 (75)	.03 (70)	-.02 (75)	-.20 (37)	-.02 (75)	
SR	.10 (75)	-.25 * (70)	-.23 * (75)	-.17 (37)	-.13 (75)	.10 (75)

Note. Cast = # of castration derivatives, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 70 due to "non-responders" and HR had an n of 37 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 18

Correlation Matrix for Castration Derivatives and ANS Measures
for the Fear Condition

	Cast	SCR	SCL	HR	PV	BV
SCR	-.12 (69) ^a					
SCL	.05 (75)	.39 *** (69)				
HR	.03 (39)	-.09 (37)	.03 (39)			
PV	.02 (75)	.25 * (69)	.17 (75)	-.11 (39)		
BV	.07 (75)	-.22 * (69)	-.15 (75)	-.23 (39)	-.00 (75)	
SR	.23 * (75)	-.14 (69)	-.15 (75)	-.02 (39)	-.10 (75)	-.04 (75)

Note. Cast = # of castration derivatives, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 69 due to

"non-responders" and HR had an n of 39 due to a lack of scorable trace.

All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 19

Correlation Matrix for Castration Derivatives and ANS Measures
for the Pain Condition

	Cast	SCR	SCL	HR	PV	BV
SCR	.19 * (70) ^a					
SCL	.16 (75)	.26 ** (70)				
HR	-.11 (40)	-.23 (38)	.01 (40)			
PV	.13 (75)	.31 ** (70)	.22 * (75)	-.15 (40)		
BV	.08 (75)	-.12 (70)	.07 (75)	-.17 (40)	-.01 (75)	
SR	-.14 (75)	-.19 (70)	-.16 (75)	.16 (40)	-.08 (75)	-.17 (75)

Note. Cast = # of castration derivatives, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 70 due to "non-responders" and HR had an n of 40 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 20

Correlation Matrix for Castration Derivatives and ANS Measures
for the Sex Condition

	Cast	SCR	SCL	HR	PV	BV
SCR	-.14 (68) ^a					
SCL	.03 (71)	.38 *** (72)				
HR	.14 (34)	-.05 (35)	.09 (36)			
PV	-.01 (71)	.34 ** (72)	.17 (75)	-.24 (36)		
BV	.21 * (71)	-.05 (72)	.18 (75)	-.09 (36)	.07 (75)	
SR	.05 (71)	-.05 (72)	-.27 ** (75)	.06 (36)	.06 (75)	.08 (75)

Note. Cast = # of castration derivatives, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 72 due to "non-responders" and HR had an n of 36 due to a lack of scorable trace. All other measures had an n of 75).

*p < .05. **p < .01. ***p < .001.

Table 21

Correlation Matrix for Castration Derivatives and ANS Measures
for the Meal Condition

	Cast	SCR	SCL	HR	PV	BV
SCR	-.08 (63) ^a					
SCL	.04 (74)	.27 * (64)				
HR	.09 (38)	-.10 (35)	.09 (38)			
PV	-.06 (74)	.17 (64)	.21 * (75)	-.11 (38)		
BV	.09 (74)	.03 (64)	-.03 (75)	-.15 (38)	-.12 (75)	
SR	.00 (74)	-.04 (64)	.03 (75)	-.15 (38)	.11 (75)	.14 (75)

Note. Cast = # of castration derivatives, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 64 due to

"non-responders" and HR had an n of 38 due to a lack of scorable trace.

All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 22

Correlation Matrix for Castration Derivatives, Somatic Symptoms,
and ANS Measures for Baseline-Free Imagery

	Cast	SCR	SCL	HR	PV	BV	SR
SCR	-.33 ** (63) ^a						
SCL	-.14 (63)	.51 *** (73)					
HR	.18 (33)	.05 (39)	.11 (40)				
PV	-.22 * (63)	.35 *** (73)	.34 *** (75)	-.18 (40)			
BV	-.02 (63)	.04 (73)	-.16 (75)	-.19 (40)	-.07 (75)		
SR	.01 (63)	-.15 (73)	-.06 (75)	-.17 (40)	-.02 (75)	.09 (75)	
Som Sym	.45 *** (63)	-.09 (73)	-.03 (75)	.16 (40)	-.09 (75)	.09 (75)	.07 (75)

Note. Cast = # of castration derivatives, Som Sym = # of somatic symptoms, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 73 due to "non-responders" and HR had an n of 40 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 23

Correlation Matrix for Castration Derivatives, Somatic Symptoms,
and ANS Measures for Dream-Free Imagery

	Cast	SCR	SCL	HR	PV	BV	SR
SCR	.08 (65) ^a						
SCL	-.17 (67)	.38 *** (73)					
HR	.11 (37)	-.03 (39)	.08 (40)				
PV	-.01 (67)	.26 ** (73)	.17 (75)	-.03 (40)			
BV	.12 (67)	-.04 (73)	-.04 (75)	-.11 (40)	-.05 (75)		
SR	.11 (67)	-.02 (73)	-.15 (75)	.13 (40)	.13 (75)	.06 (75)	
Som Sym	.09 (67)	.07 (73)	-.09 (75)	.16 (40)	-.04 (75)	.04 (75)	.26 ** (75)

Note. Cast = # of castration derivatives, Som Sym = # of somatic symptoms, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^a $\underline{n}$ for each cell (ANS measures: SCR had an $\underline{n}$ of 73 due to "non-responders" and HR had an $\underline{n}$ of 40 due to a lack of scorable trace. All other measures had an $\underline{n}$ of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 24

Correlation Matrix for Castration Derivatives, Somatic Symptoms,
and ANS Measures for Fear-Free Imagery

	Cast	SCR	SCL	HR	PV	BV	SR
SCR	-.05 (64) ^a						
SCL	-.00 (70)	.40 *** (69)					
HR	-.02 (40)	.13 (40)	.05 (42)				
PV	-.20 * (70)	.30 ** (69)	.25 * (75)	.01 (42)			
BV	.19 (70)	-.12 (69)	-.16 (75)	-.14 (42)	-.04 (75)		
SR	-.11 (70)	.14 (69)	-.13 (75)	.09 (42)	.11 (75)	.12 (75)	
Som Sym	.14 (70)	-.01 (69)	-.10 (75)	.19 (42)	.02 (75)	-.19 * (75)	.18 (75)

Note. Cast = # of castration derivatives, Som Sym = # of somatic symptoms, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 69 due to "non-responders" and HR had an n of 42 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 25

Correlation Matrix for Castration Derivatives, Somatic Symptoms,
and ANS Measures for Pain-Free Imagery

	Cast	SCR	SCL	HR	PV	BV	SR
SCR	-.20 * (66) ^a						
SCL	-.10 (70)	.33 ** (71)					
HR	.06 (37)	.07 (36)	.10 (37)				
PV	-.01 (70)	.18 (71)	.13 (75)	-.23 (37)			
BV	.04 (70)	-.08 (71)	.05 (75)	-.21 (37)	.00 (75)		
SR	-.01 (70)	.16 (71)	-.09 (75)	.20 (37)	.03 (75)	.09 (75)	
Som Sym	.14 (70)	-.16 (71)	-.16 (75)	-.07 (37)	.10 (75)	.01 (75)	-.00 (75)

Note. Cast = # of castration derivatives, Som Sym = # of somatic symptoms, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 71 due to "non-responders" and HR had an n of 37 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 26

Correlation Matrix for Castration Derivatives, Somatic Symptoms,
and ANS Measures for Sex-Free Imagery

	Cast	SCR	SCL	HR	PV	BV	SR
SCR	-.13 (62) ^a						
SCL	-.06 (67)	.34 ** (69)					
HR	-.13 (39)	.12 (41)	.16 (42)				
PV	-.10 (67)	.11 (69)	.20 * (75)	-.17 (42)			
BV	.14 (67)	-.18 (69)	.16 (75)	.00 (42)	.07 (75)		
SR	-.22 * (67)	-.14 (69)	-.19 * (75)	-.27 * (42)	.16 (75)	.14 (75)	
Som Sym	.39 *** (67)	-.14 (69)	-.31 ** (75)	.14 (42)	-.01 (75)	-.07 (75)	.06 (75)

Note. Cast = # of castration derivatives, Som Sym = # of somatic symptoms, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 73 due to "non-responders" and HR had an n of 40 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 27

Correlation Matrix for Castration Derivatives, Somatic Symptoms,
and ANS Measures for Meal-Free Imagery

	Cast	SCR	SCL	HR	PV	BV	SR
SCR	-.25 * (66) ^a						
SCL	-.13 (71)	.23 * (70)					
HR	.11 (38)	-.06 (38)	.02 (40)				
PV	-.28 ** (71)	.14 (70)	.21 * (75)	-.26 * (40)			
BV	.03 (71)	-.08 (70)	-.06 (75)	-.05 (40)	-.05 (75)		
SR	-.05 (71)	.04 (70)	-.03 (75)	-.19 (40)	.08 (75)	.07 (75)	
Som Sym	.19 (69)	-.10 (68)	-.17 (73)	.03 (40)	-.00 (75)	-.07 (75)	-.06 (75)

Note. Cast = # of castration derivatives, Som Sym = # of somatic symptoms, SCR = skin conductance response rate (r/sec), SCL = skin conductance level, HR = heart rate, PV = pulse volume, BV = blood volume, SR = saliva rating.

^an for each cell (ANS measures: SCR had an n of 70 due to "non-responders" and HR had an n of 40 due to a lack of scorable trace. All other measures had an n of 75).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Hypotheses

Hypothesis I

Hypothesis I, which asserts that analogical models (TOD) are drive gratifying and characterized by parasympathetic activation, was rejected; however, its subsequent replacement was corroborated.

The TOD scores associated with each of the experimental conditions and post-free imagery periods ($n = 10$) were ranked, as were each of the median ANS measures, except for the saliva rating (SR) which displayed too little variation. A Spearman correlation ($df = 9$) applied to SCR, SCL, and HR produced significant coefficients of .59, .59, and .63, respectively, $p < .05$. The peripheral blood flow measures of PV and BV had coefficients of -.63 and -.39, respectively, the former of which was also significant, $p < .05$. TOD is related to an increase in sympathetic activation on SCR and all other noncritical measures.

This finding is consistent with topographic theory; namely, a sexual wish is a part of patterned motor behavior (SNS effects) that is requisite to gratification discharge (SNS affects orgasm). Accordingly, SNS activation is not intrinsically aversive. It would be reasonable to opine that PNS effects are superimposed or "woven" into increasing SNS activation.

Hypothesis II

Hypothesis II, which asserts that somatic symptoms are libidinized and, therefore, characterized by parasympathetic activation, was accepted. However, not all somatic symptoms are libidinized. Freud (1916-17/1963, p. 300-301) maintained that psychoneurotic symptoms, like dreams, are wish-fulfilling compromise formations (derivatives).

A Spearman correlation was applied to the number of symptoms and each of the ANS measures. Special attention was given to the two

electrodermal measures (SCR and SCL) since they were significantly positively correlated in all eleven periods of observation (none of the remaining measures behaved comparably). Consistent with the hypothesis, the SCR measure was in the expected negative direction in five of the six conditions, and it was significantly correlated for Baseline, $p < .01$, and Meal-free imagery, $p < .05$. Although SCL failed to achieve significance in any of the six free imagery periods, it was also uniformly in the expected negative direction (see Tables 22 - 27).

A further articulation of Freud's topographic core commitments which inspired this hypothesis reveals that not all somatic symptoms are compromise formations accompanied by PNS effects. Only hysterical symptoms (compromise formations) are germane to this hypothesis. Freud distinguished these from anxiety which are referred to in the present study (Appendix B) as manifestations of the self-preservative instinct (SPI). However, in the topographic perspective, anxiety (including SPIs) are produced by an insufficiency of repression which, indeed, might be the case for an unknown number of the subjects in this research. Because the recall of a disturbing dream followed by free imagery have proven to be powerful instigators of uncovering in Emergent Uncovering Psychotherapy (Morishige & Reyher, 1975; Reyher, 1977, 1978), simple requests for free imagery are often highly productive for instigating uncovering and symptom formation. Another source of somatic symptoms occurs when the symptoms of anxiety are used as substitutes for sexual arousal when sexual arousal is prohibited (Freud, 1895/1962, p. 101). Unfortunately, without the benefit of successful uncovering there is no way to distinguish an hysterical symptom from the others just described. Future research incorporating these understandings might find even more cogent corroboration of this hypothesis.

Hypothesis III

Hypothesis III, which asserts that analogues of TOD in the free imagery periods are less evident following the presence of TOD in the preceding experimental conditions, was corroborated.

Figure 1 shows that in every case except for the Meal, the free imagery periods were associated with smaller TOD scores than the paired treatment condition. Consistent with the hypothesized venting effect, the conspicuously low TOD score in the Meal condition (suggesting limited gratification) was followed by an increase in TOD in the post-free imagery period. Presumably, the TOD sequence in the Meal was incomplete (arrested).

A Spearman correlation was performed in order to assess the correlation between the rank orders of TOD scores in each condition with the subsequent decreases in score in the following free imagery periods. The set of rankings for the five TOD scores and for the decreases in scores (difference scores) for both males and females were summed without regard to gender for a total of ten in each rank order, and the results were significant, ($df = 9$) $r = .83$, $p < .01$. Thus, the higher the TOD score in the experimental condition, the larger the decrease in score in the paired post-free imagery period. Accordingly, this hypothesis for the venting effect was accepted.

Although the evaluation of this hypothesis did not specify ANS measures, Figures 2 - 6 reveal that the free imagery periods were uniformly lower in sympathetic activation than their paired conditions on all measures with the exception of SCL and PV for particular conditions. SCL shows a reversal for the Meal condition and its free imagery period which, in fact, corresponds to their reversed TOD scores, which is consistent with the venting effect (Figure 3). Also, PV anomalously shows that there is a reversal for the Pain condition and its free imagery period (Figure 5). These

ANS findings are compromised, however, by the fact that the experimental conditions required subjects to fulfill a task, whereas the free imagery periods did not. Morishige and Reyher (1975) showed that there was a reliable and significant difference in SNS activation between the recall of prior free imagery and a baseline (spontaneous free imagery), allegedly due to additional effort required in revisualization. This is also consistent with the electrophysiological literature that shows that any different set of instructions activates the SNS, as well as novel or ambiguous instructions. It is for this reason that ANS variables were not deemed to be suitable measures for evaluating this hypothesis.

Hypothesis IV

Hypothesis IV, which asserts that castration is more evident in the mentation of males than females, was rejected. This gender difference was expected since males are more apt to anticipate castration due to their possession of a penis.

First, not all eleven conditions may be viewed as candidates for evaluating this hypothesis, since the narrative request by necessity includes material that inappropriately meets the criteria for scoring castration. The implicit threat of injury/castration in the Fear and Dream (nightmare) conditions, and its actual occurrence in the Pain condition tend to "pull" for, or even demand such derivatives. In addition, the Meal was found to contain confounding castration derivatives (e.g., "carving" or "cutting" a turkey with a sharp knife before eating). Only the Baseline and Sex conditions are uncontaminated. Nevertheless, the Mann-Whitney U-test was applied anyway to compare the incidence of castration between males and females in all eleven observation periods. None were significant. Table 28 displays these findings.

Insert Table 28 about here

Unfortunately, the derivation of this hypothesis did not take into account Freud's (1933/1964, p. 125) view on the castration complex of females, which hinges on the loss of their "own" penis; its adverse effect on self-regard and their search for substitutes (i.e., a baby) and/or other compensatory behavior. Most Freudian scholars and researchers, including two recent investigations (Cowden, 1992; Tobias, 1993), only focus on castration as an Oedipal complex (a male dynamic).

Hypothesis V

Hypothesis V, which asserts that reports containing depictions of castration (along with the ubiquitous sexual derivatives) are "doubly" gratifying and are characterized by more parasympathetic activity than reports without castration, was accepted with reservations.

A Spearman correlation was used on the number of castration derivatives with each ANS measure. Once again, only the electrodermal measures behaved appropriately. First, in the experimental conditions (Tables 17 - 21), the electrodermal measure of SCR was shown to be in the expected negative direction in four out of five conditions, with an unexpected significant positive correlation for the Pain condition, $p < .05$. Unlike SCR, SCL was not in the expected negative direction in any of the experimental conditions (zero for five).

In the free imagery periods, both SCR and SCL were consistent. As can be seen in Tables 22 - 27, SCR was in the expected negative direction in five out of six conditions, and was significant for the Baseline, $p < .01$, and the Pain-and Meal-free imagery periods, $p < .05$. Likewise, SCL was in the

Table 28

Comparison^a of the Number of Castration Waypoints Between Males and Females

Condition	U	z	p ^b
Baseline-free imagery	438.5	-.95	.34
Dream	637.0	-.72	.47
Free imagery	558.0	-.04	.97
Fear	653.0	-.54	.59
Free imagery	590.5	-.28	.78
Pain	671.0	-.34	.73
Free imagery	600.5	-.14	.89
Sex	600.5	-.49	.63
Free imagery	544.0	-.26	.79
Meal	601.0	-.99	.32
Free imagery	621.5	- 10	.92

^aMann-Whitney U Test. ^btwo-tailed

expected negative direction in all six free imagery periods.

SR was in the expected positive direction in four out of five experimental conditions, significant for Fear, $p < .05$, and BV was in the expected positive direction in five out of five conditions, significant for Sex, $p < .05$. PV and HR, however, did not produce comparable results (although HR was significant in the expected negative direction for the Baseline, $p < .01$).

While BV was in the expected positive direction in five out of six free imagery periods (all but the Baseline), PV was not in the expected positive direction for any. Anomalously, PV was significant in the opposite (negative) direction, $p < .05$, for three free imagery periods (Baseline-, Fear-, and Meal-free imagery). HR and SR did not produce comparable results, and SR had a significant correlation in the opposite (negative) direction for the Sex-free imagery, $p < .05$.

Hypothesis VI

Hypothesis VI, which asserts that castration derivatives observed in the females' reports are characterized by more parasympathetic activity than castration reported by males, could not be evaluated fairly. Such an ANS imbalance is viewed to be consistent with Freud's contention that castration for females gratifies the unconscious fantasy that they once had a penis, as well as incites unconscious anticipation of acquiring a new one.

A fair evaluation of this hypothesis requires the elimination of order effects (namely, habituation) in the ANS measures through counter-balancing. Unfortunately, each gender by itself was not counter-balanced. To assess the effects of habituation a Friedman two-way analysis was applied to the first and fifth orders and, indeed, was found to be significant for all but PV and SR. A Spearman correlation was applied to the number of castration

derivatives and each of the ANS measures for both males and females. There were no apparent gender differences associated with PV or SR, or any of the other ANS measures, and so the hypothesis was rejected.

Other Findings

Reactivity to Treatment Conditions.

A recent investigation on figure drawings (Tobias, 1993) concluded that males were more libidinally reactive to drawing nude bodies than were females, and that only males retained their libidinal reactivity under conditions of high ego threat (imminence of narcissistic injury)..

TOD scores. Males in the present investigation also appeared to be more reactive than females in the sense that they experienced more venting to several of the narratives. However, evaluating the significance of the variation in TOD scores across data sets is problematic because each sample is a composite of the same and different subjects. Moreover, not all subjects had "scorable" TOD in every condition since some reports consisted of less than two episodes (particularly in the free imagery periods). Subsequently, each condition varied in its n and in the particular makeup of subjects. A statistical test based on independent samples is too conservative, whereas a test based on repeated measures on these same subjects is too liberal. Fisher's Z transformation and Hotellings t (see Walker & Lev, 1953) correspond to conservative and liberal tests, respectively.

Fisher's Z-difference scores in Table 29 for for both experimental conditions and post-free imagery periods show that the treatment conditions were most differentially influential (inducing reactions--reactivity). Six and three contrasts apiece attained significance. However, when the composite sample was broken down by gender, males displayed impressively more reactivity in the post-free imagery periods than the experimental conditions by

a margin of six to one (Tables 30 and 31). For females this was two to three. Why males were more reactive in the post-free imagery periods is puzzling. Differential carry-over effects is a reasonable explanation.

Insert Tables 29 - 31 about here

Hotellings t -difference scores in Table 32 indicate similar reactivity between both the experimental conditions and the post-free imagery periods with the composite sample. Seven and five contrasts apiece were significant. A somewhat different picture emerged in regard to gender. Tables 33 and 34 still show that males were more reactive than females in ratio of 6/3 for treatments and 5/0 for post-free imagery periods.

Insert Tables 32 - 34 about here

Overall, these findings are consistent with Freud's (1914/1957) topographic view, namely, that males are more reactive than females because of differences in the aims of the sexual instincts: males are phallic-aggressive, whereas females are passive-receptive (see Tobias [1993] for a more extended discussion).

ANS measures. An increase in reactivity should decrease the homogeneity of scores across ANS variables because of different effects generated by the different narrative content of the treatment conditions. Therefore, homogeneity (concordance among measures) is expected to be lower for the experimental conditions than the post-free imagery periods. Accordingly, the five median ANS measures (SCR, SCL, HR, PV, and BV) were rank ordered across treatment conditions and across post-free imagery

Table 29

**Fisher's Z-Differences in TOD Scores Between Experimental Conditions
and Between Free Imagery Periods**

		Experimental conditions			
		Dream	Sex	Meal	Fear
		(.88)	(.81)	(.52)	(.87)
Sex	(.81) ^a	NS			
Meal	(.52)	4.63 **	3.10 **		
Fear	(.87)	NS	NS	4.43 **	
Pain	(.75)	2.38 *	NS	2.32 *	2.14 *
		Free imagery periods			
		Dream-FI	Sex-FI	Meal-FI	Fear-FI
		(.70)	(.42)	(.76)	(.50)
Sex-FI	(.42)	NS			
Meal-FI	(.76)	NS	2.90 *		
Fear-FI	(.50)	NS	NS	2.33 *	
Pain-FI	(.70)	NS	2.26 *	NS	NS

Note. FI = free imagery.

^aTOD score.

*p < .05. **p < .01.

Table 30

Fisher's Z-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Males

Experimental conditions				
	Dream	Sex	Meal	Fear
	(.87)	(.85)	(.65)	(.70)
Sex (.85) ^a	NS			
Meal (.65)	2.20 *	NS		
Fear (.70)	NS	NS	NS	
Pain (.83)	NS	NS	NS	NS
Free imagery periods				
	Dream-FI	Sex-FI	Meal-FI	Fear-FI
	(.43)	(.23)	(.82)	(.77)
Sex-FI (.23)	NS			
Meal-FI (.82)	2.41 *	4.04 **		
Fear-FI (.77)	2.01 *	3.59 **	NS	
Pain-FI (.20)	NS	NS	4.15 **	3.81 **

Note. FI = free imagery.

^aTOD score.

*p < .05. **p < .01.

Table 31

Fisher's Z-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Females

Experimental conditions				
	Dream	Sex	Meal	Fear
	(.82)	(.73)	(.50)	(.82)
Sex (.73) ^a	NS			
Meal (.50)	2.47 *	NS		
Fear (.82)	NS	NS	2.49 *	
Pain (.82)	NS	NS	2.51 *	NS
Free imagery periods				
	Dream-FI	Sex-FI	Meal-FI	Fear-FI
	(.69)	(.40)	(.53)	(.35)
Sex-FI (.40)	NS			
Meal-FI (.53)	NS	NS		
Fear-FI (.35)	2.87 **	NS	1.98 *	
Pain-FI (.40)	NS	NS	NS	NS

Note. FI = free imagery.

^aTOD score.

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

Table 32

**Hotelling t-Differences in TOD Scores Between Experimental Conditions
and Between Free Imagery Periods**

Experimental conditions				
	Dream	Sex	Meal	Fear
	(.88)	(.81)	(.52)	(.87)
Sex (.81) ^a	2.59 *			
Meal (.52)	6.41 **	4.44 **		
Fear (.87)	NS	NS	6.01 **	
Pain (.75)	3.10 **	NS	2.88 *	2.85 *
Free imagery periods				
	Dream-FI	Sex-FI	Meal-FI	Fear-FI
	(.70)	(.42)	(.76)	(.50)
Sex-FI (.42)	2.82 *			
Meal-FI (.76)	NS	3.59 **		
Fear-FI (.50)	2.23 *	NS	2.73 *	
Pain-FI (.70)	NS	2.80 *	NS	NS

Note. FI = free imagery.

^aTOD score.

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

Table 33

Hotelling t-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Males

Experimental conditions				
	Dream	Sex	Meal	Fear
	(.87)	(.85)	(.65)	(.70)
Sex (.85) ^a	NS			
Meal (.65)	3.12 *	2.67 *		
Fear (.70)	3.16 *	2.00 *	NS	
Pain (.83)	NS	NS	2.20 *	5.94 **
Free imagery periods				
	Dream-FI	Sex-FI	Meal-FI	Fear-FI
	(.43)	(.23)	(.82)	(.77)
Sex-FI (.23)	NS			
Meal-FI (.82)	3.24 *	4.12 **		
Fear-FI (.77)	2.47 *	3.34 *	NS	
Pain-FI (.20)	NS	NS	4.70 **	NS

Note. FI = free imagery.

^aTOD score.

*p < .05. **p < .01.

Table 34

Hotelling t-Differences in TOD Scores Between Experimental Conditions and Between Free Imagery Periods for Females

Experimental conditions				
	Dream	Sex	Meal	Fear
	(.82)	(.73)	(.50)	(.82)
Sex (.73) ^a	NS			
Meal (.50)	3.17 *	NS		
Fear (.82)	NS	NS	3.46 *	
Pain (.82)	NS	NS	3.01 *	NS
Free imagery periods				
	Dream-FI	Sex-FI	Meal-FI	Fear-FI
	(.69)	(.40)	(.53)	(.35)
Sex-FI (.40)	NS			
Meal-FI (.53)	NS	NS		
Fear-FI (.35)	NS	NS	NS	
Pain-FI (.40)	NS	NS	NS	NS

Note. FI = free imagery.

^aTOD score.

*p < .05. **p < .01.

periods. Kendall's coefficient of concordance for this contrast were .10 and .39. The data was divided according to gender, and for males these were .26 and .48 and for females these were .26 and .60 ($p < .05$). The ANS varied more in synchrony for females than males in the post-free imagery periods, allegedly because of fewer carry-over effects from the experimental conditions.

Conclusion. Both TOD scores and ANS measures show that males were more reactive than females to the procedures of the research, which, as noted, is consistent with Freud's articulation of differences in male and female instincts.

Vicissitudes of TOD Across Conditions.

Tables 4 - 8 show the rank orders of waypoints for each of the treatment conditions, and Table 35 displays the matrix of their inter-correlations. The median correlation is .61. As expected, the Dream and Sex conditions were highly correlated (.89). This was expected on Freud's view because dreams are instigated by the sexual instinct. Note that REM sleep is accompanied by objective sexual arousal (Fisher, 1966; Fisher et al., 1965; Karacan et al., 1966; Pivick, 1978). The second highest correlation was between the Dream and the Fear conditions (.83). This is consistent with Freud's claim that anything that excites the nervous system trenches on sexuality. The lowest correlation between the Pain and Meal conditions (.10) is unexplainable.

Insert Table 35 about here

Gender. Tables 36 and 37 reveal that both genders are equivalent with respect to medians (.67 and .61), but for females the Fear and Pain

Table 35

Spearman Correlations for Waypoint Rank Orders^a Between Experimental Conditions and Between Free Imagery Periods

		Experimental conditions ^c			
		Dream	Sex	Meal	Fear
		(.88)	(.81)	(.52)	(.87)
Sex	(.81) ^b	.89 **			
Meal	(.52)	.52	.58		
Fear	(.87)	.83 **	.63 *	.27	
Pain	(.75)	.67 *	.37	.10	.72 *
		Free imagery periods ^d			
		Dream-FI	Sex-FI	Meal-FI	Fear-FI
		(.70)	(.42)	(.76)	(.50)
Sex-FI	(.42)	.48			
Meal-FI	(.76)	.33	.42		
Fear-FI	(.50)	.57	.55	.28	
Pain-FI	(.70)	.28	.47	.40	.18

Note. FI = free imagery.

^a $n = 9$ (excludes Personification waypoint). ^bTOD score.

^cMedian = .61. ^dMedian = .36.

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

conditions enter into higher correlations (.83 and .88) with the Dream condition than does the Sex condition (.73). This was not the case for males whose corresponding correlations for Fear and Pain were .81, .87, but the correlation between the Sex and Dream condition was .90.

Insert Tables 36 and 37 about here

This disparity (.73 for females versus .90 for males) between Sex and Dream suggests that the sexual narratives reported by females were not as blatantly sexual as those of the males. A cursory inspection of the relative blatancy of the sexual depictions confirms this gender disparity. Males made more direct and indirect references to actual intercourse, and with more explicit detail, than did females. In contrast, the reports given by females tended to be more "romantic" or "gentle", often emphasizing a sense of serenity rather than actual sexual activity. This is consistent with Freud's view (1933/1964) that instinctual impulses are often modified and inhibited in their aim by way of sublimation. He cites as an example, the relation of "tenderness, which undoubtedly originates from the sources of sexual need and invariably renounces its satisfaction" (p. 97).

Nevertheless, for both genders, the Sex, Fear, and Pain conditions were highly correlated with the Dream condition. (The highest correlation, however, for both genders was that between Fear and Pain, .96 and .93, respectively). On Freud's topographic view (1905/1953), the high correlations between the Fear and Pain conditions with the Dream are consistent with the substitutibility of exciting effects for sex—they become sexualized (the sexual instinct being embodied in a dream).

Table 36

Spearman Correlations for Waypoint Rank Orders^a Between Experimental Conditions and Between Free Imagery Periods for Males

		Experimental conditions ^c			
		Dream	Sex	Meal	Fear
		(.87)	(.85)	(.65)	(.70)
Sex	(.85) ^b	.90 **			
Meal	(.65)	.67 *	.66 *		
Fear	(.70)	.81 **	.58	.68 *	
Pain	(.83)	.87 **	.62 *	.62 *	.96 **
		Free imagery periods ^d			
		Dream-FI	Sex-FI	Meal-FI	Fear-FI
		(.43)	(.23)	(.82)	(.77)
Sex-FI	(.23)	.05			
Meal-FI	(.82)	-.12	-.08		
Fear-FI	(.77)	.29	-.02	.92 **	
Pain-FI	(.20)	.68 *	-.18	.28	.28

Note. FI = free imagery.

^a_n = 9 (excludes Personification waypoint). ^bTOD score.

^cMedian = .67. ^dMedian = .21.

*p < .05. **p < .01.

Table 37

Spearman Correlations for Waypoint Rank Orders^a Between Experimental Conditions and Between Free Imagery Periods for Females

Experimental conditions ^c				
	Dream	Sex	Meal	Fear
	(.82)	(.73)	(.50)	(.82)
Sex (.73) ^b	.73 *			
Meal (.50)	.48	.27		
Fear (.82)	.83 **	.55	.58	
Pain (.82)	.88 **	.65 *	.32	..93 **
Free imagery periods ^d				
	Dream-FI	Sex-FI	Meal-FI	Fear-FI
	(.69)	(.40)	(.53)	(.35)
Sex-FI (.40)	.03			
Meal-FI (.53)	.00	.45		
Fear-FI (.35)	.09	.37	.20	
Pain-FI (.40)	.27	.63	.80	.31

Note. FI = free imagery.

^a $n = 9$ (excludes Personification waypoint). ^bTOD score.

^cMedian = .61. ^dMedian = .29.

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

Vicissitudes of TOD Across Post-Free Imagery Periods.

Tables 10 - 14 show the rank orders of waypoints for each of the post-free imagery periods, and Table 35 displays the matrix of their inter-correlations. The median correlation of .36 is much lower than for the experimental conditions (.61). Interpretation of the post-free imagery periods is made difficult by the likely presence of different critical carry-over and venting effects from the preceding treatment condition and the absence of a standard or common point of reference--the Dream condition.

Gender. In the male matrix (Table 36), four out of the five correlations below its median (.21) are those associated with Sex.. (Three of these are negative). This outcome implies that males experienced more venting during the Sex condition than the other conditions. Using the same logic, the very high correlation (.92) between Fear and Meal indicates that venting during these treatment conditions was minimal.

In terms of this logic, the high correlation (.80) in the female matrix (Table 37) indicates that they experienced the least venting between the Pain and Meal conditions. However, they did not experience as much gratification discharge in the Sex conditions as did males. Instead, it was the Dream condition--four out of the five correlations below the median (.29) are associated with the dream. This disparity in venting during the Sex narratives is graphically evident; males were much more likely to be blatantly and graphically depictive of genital sex than females.

Following the example of Campbell and Fisk (1959) in applying nonparametric methods to correlation matrices, the Mann-Whitney U test was applied to the Sex array for males and the Dream array for females, producing a $U = 1$, $p = .019$, and $U = 3$, $p = .033$, respectively in each case. The inference of extensive venting in the Sex array for males is in accord with

topographic theory, but the dream array for females is not. To be consistent with the outcome for females, dreaming must provide more sexual gratification than does objective sexuality, a point made above in connection with the vicissitudes of the five treatment conditions.

Conclusion. Both genders are unlikely to experience unconscious sexual gratification in eating a meal. Fear also appears to be a less effective vehicle of gratification for males, whereas pain is for females. Nevertheless, Fear and Pain for both genders have high correlations with the Dream treatment condition, .81 and .87 for males, and .83 and .88 for females. It appears that each is a good vehicle (substitute) for gratification and that they take different forms in males and females because of their different instinctual aims.

Detumescence

Detumescence derivatives, characterized by post-orgasm diminution of movement and/or deflation, are analogous to the final resolution phase in the human sexual response cycle (Masters & Johnson, 1966). Due to imprecise criteria, this waypoint was not included in Reyher's original scale (1988), or in his more recently developed version (1991) used to score the present data for TOD.

Table 38 shows the rank order positions, mean quartile values, and standard deviations for the Detumescence waypoint across conditions. It tended to occur near the expected final position in rank order, falling short by one or more positions in most periods of observation. A comparison of the mean quartile values with those of the other waypoints can be observed for each condition in Tables 4 - 15. Unfortunately, the variability is relatively higher than that of the other waypoints, as it was in the original scale, indicating need for further refinement.

Insert Table 38 about here

An interesting observation in the Detumescence data was the difference between conditions in the number of subjects who employed this waypoint in their TOD sequence. The treatment conditions in which the least number of subjects used this derivative were Sex, Dream, and Meal, which had n s of 15, 17, and 20, respectively ($N = 75$). Pain and Fear, the two negative or aversive narratives, had the highest rate of subjects (27 and 35, respectively). The aversive content of these latter two conditions appears to be most conducive to the resolution phenomena (as indexed by Detumescence). Why the disturbing Dream was so much lower is not clear. Are derivatives of sexual resolution commensurate with more successful completion of TOD? If this is the case, the Fear and Pain narratives were again found to provide substitute gratification. Further investigation into this final waypoint in the sequence may provide pertinent information regarding the nature of completed TOD (gratification discharge).

Table 38

Comparison of TOD Rank Order Positions, Quartile Means, and Standard Deviations for the Detumescence Waypoint Among Experimental Conditions and Free Imagery Periods

Condition	Rank ^a	SD	M	n ^b
Baseline-free imagery	9	2.73	1.04	17
Dream	9	2.76	1.04	17
Free imagery	9	2.57	1.03	21
Fear	9	2.86	1.15	35
Free imagery	8	2.47	.89	29
Pain	9	2.67	.82	27
Free imagery	9	2.69	1.03	33
Sex	8	2.97	1.11	15
Free imagery	10	2.94	1.02	29
Meal	9	2.96	.93	20
Free imagery	6	2.33	1.13	21

^aPosition in TOD rank order (All conditions have 10 waypoints except Dream/Dream-free imagery which include Personification and have 11 waypoints). ^bnumber of subjects (out of 75) using Detumescence waypoint.

GENERAL DISCUSSION

The ubiquity (generality) of TOD is impressive. It was present in the treatment conditions as well as the post-free imagery periods. Consistent with topographic theory, fear and pain are both effective vehicles for gratification for both genders, and these findings appear to be robust. Its operation during periods of presumed heightened ego threat (baseline) is also consistent with the previously mentioned investigation on figure drawings (Tobias, 1993) in which libidinal activation (for males) was unabated under conditions of high ego threat.

Retaining the original version of Hypothesis I, which asserts that TOD is under the sway of the PNS, for its heuristic value while holding to its belated alternative (SNS dominance) may seem comparable to "heads I win, tails you lose". However, when considered in the time honored tradition of testing rival theories, it is not problematic; either way a crucial investigation has a substantive "successful" outcome. Stalwart orthodox Freudians object to reducing the operation of the psychic apparatus to physiology. They insist in favor of a psychic domain under the governance of the psychic apparatus, whereas biologically-oriented psychoanalytic investigations (e.g., Fisher et al., 1983) reduce psychic processes to physiology (Reyher, 1991). Advocates of the latter (autonomic determinism rather than psychic determinism) will welcome the finding that SNS activation is proportionate to the degree to which the TOD sequence was evidenced.

Freud's conception of the psychic apparatus as a device for mediating disguised wish-fulfillment and his commitment to psychic determinism, two cornerstones of his theoretical edifice (Reyher, 1988), remain tenable in light of the ubiquity of TOD and the multiple sources of evidence for venting. That is, all mentation, including psychopathology, is generated by the vicissitudes

of a wish in its traverse of the psychic apparatus. This poses a problem for Freudian revisionists who dispense with psychic determinism, whether it be the conflict-free ego sphere of psychoanalytic ego psychologists or contemporary developmental psychoanalysts, the action language of Schafer (1976), or the self-reflection of hermeneutic revisionists (Habermas, 1971).

A more complete understanding of the acceptance of Hypothesis II, which asserts that somatic symptoms mediate PNS effects, is contingent upon the establishment of criteria for specifying the origin or type of somatic symptoms, specifically whether their etiology is that of a compromise formation (hysterical symptom), concomitant of real anxiety (self-preservation instinct), or the manifestation of an actual neurosis (damned-up libido). This question is susceptible to resolution from an empirical standpoint by clients undergoing Emergent Uncovering Psychotherapy while being monitored by ANS measures, especially SCR. The etiology of hysterical and anxiety symptoms can be identified. As already noted, in Reyher's latest version of the TOD sequence (1991), somatic symptoms are one of several independent vehicles of gratification (modes of representation) in providing disguised and partial gratification of an activated unconscious fantasy. This is consistent with Freud's topographic view that almost any part of the body and its function can become sexualized (a vehicle for gratification discharge) and thereby enter into conflict: prohibition and retaliation by instinct-restraining processes. Moreover, Freud's metapsychology is the only source of constructs for conceptualizing the domain of phenomena addressed by the experimental hypotheses and brought to light by the unplanned findings.

The absence of gender differences in the incidence of castration derivatives and corresponding ANS levels (Hypothesis IV and VI) speaks to Freud's contention that castration is crucial to the psychosexual development

for both males and females (1925/1961). These findings are consistent with the absence of observed gender differences in castration depictions that emerge in patients' reports during Emergent Uncovering Psychotherapy (Reyher, 1988). According to Freud, the castration complex is present in both males and females, but its relationship to the Oedipal complex is fundamentally different between genders; "whereas in boys the Oedipal complex succumbs to the castration complex, in girls it is made possible and led up to by the castration complex" (1925/1961, p. 256). This difference is explained by the way in which the castration complex "inhibits and limits masculinity and encourages femininity" (p. 256). Freud stated that the anatomical distinction and subsequent psychical situation between females and males corresponds to the difference between a "castration which has been carried out and one that has merely been threatened" (p. 257). Therefore, castration derivatives served very different purposes and gratified different unconscious needs for male and female subjects, but were equally present in the reports of both genders.

The low intercorrelations between ANS measures, particularly when they differentiate between treatment conditions and their post-free imagery periods, highlights the lack of equivalence between measures that otherwise seem to be equivalent (they differentiate between high and low SNS periods of observation). In absolute quantitative terms they are similar, but they approach independence (trivial intercorrelations). This ought to concern researchers on affect/stress who tend to consider the diverse ANS measures to be equivalent.

Although this investigation was not intended to be a contribution to the literature on the differential emotional patterning of ANS measures, the findings are germane nonetheless. This literature tends toward chaos even

though some sort of pattern emerges in published investigations, which, of course, is in keeping with the James-Lang theory of emotion (Stern & Sison, 1990). The inconsistency among investigations can be attributed, in part, to differences in modality of induction of emotion, types of emotion induced, the purity of the emotion, the type of electrophysiological measures employed, and the population from which the sample was obtained. The failure to find differences among the five treatment conditions (Friedman analysis of variance) was unexpected and puzzling, especially when four of the measures differentiated considerably between the treatment conditions and their paired-free imagery periods.

There are no apparent sources of unreliability, confounding, or artifact, to compromise the findings, other than the laboratory situation itself, which is inherently intimidating (imminence of narcissistic injury) and the fact that subjects were immobilized. The latter is the more problematic because the former recedes over time and is removed by counterbalancing of conditions. In effect, immobilization factors out motor behavior which is natural but not an equal accompaniment of the five narrative accounts requested. Certainly motor involvement, which has powerful SNS effects, is likely to be lower in the Meal condition, for example, than in Sex. This may not necessarily be the case, however, for the Pain condition, in which the subject may have been immobilized by injury or, like the laboratory situation, was constrained for dental or surgical procedures. Removing this source of confounding may prove to be intractable.

Recall from Other Findings that males appeared to be more reactive with respect to TOD than were females, and that females obtained more libidinal gratification (venting) in their dreams than from their own sexual narrative accounts. Since a myriad of investigations shows that females are

more disclosing, we can feel confident of their marked trend toward romantic interpersonally-focused sexual encounters. Should we take these accounts as being more veridical than the trend toward male blatantly depictive accounts? No, not in respect to Freud's (1925/1961; 1933/1964) clinical theory on the distinction between genders. The obtained gender disparity is consonant with Freud's claim that females have more complications in their psychosexual development than males, given their perceived organ inferiority, problems attendant to abandoning clitoral to vaginal sexuality, and shift in gender of sexual object, all of which result in the requirement for greater repression. The superior venting of female dreams would allow access to infantile, phallic-aggressive sexuality, wherein "little girls are little boys" (1933/1964, p. 118).

In contrast, non-Freudian explanations attribute the disparity to cultural stereotypes operating through the presentation of self impression management. These theories could not have generated the experimental hypotheses that were corroborated, or explain the data used to test the hypotheses. Their domain is sociological and interpersonal, not intrapsychic.

According to topographic theory, the different outcomes between genders were due to their different instinctual aims (phallic-aggressive versus passive-receptive). They produce divergent characterological trends and problematic life experiences. Because of their active (phallic-aggressive) sexual aims, males are instrumental in bringing about fear and pain, i.e., the hardships of adventure, whereas the passive-receptive sexual aims of females incline them to become victims of fate (Reyher, 1988). Thus, females find substitutive gratification of prohibited sexual wishes in pain and suffering from fate (and from phallic-aggressive males). In Schafer's view (1984), these two divergent instinctual aims constitute neurotic trends. In accord with

their active aims, the males' neurotic trend is in "the pursuit of failure". The female neurotic trend, "the idealization of unhappiness", is now enshrined in the appendix of the DSM-III-R (self-defeating personality disorder). If Freud is correct, fear, pain, and anguish will remain with us as prominent aspects of the human condition.

Based on the present findings, future investigations should focus on the varying effects of the different modes of representation for the TOD sequence. While the four modes used in the present study (imagistic, verbal/discursive, affective, and somatic) all provided vehicles of representation for TOD waypoints, different systematic effects associated with each of the modes could be present. The imagistic and verbal depictions appeared to be the most common, and different waypoints probably employed specific modes more than others. Since conversion reactions are more prevalent among females in a clinical sample, a possible gender difference for somatic symptoms is also possible. In addition to gender effects, the specific narrative tasks may have differentially affected the use of modes.

Differential ANS functioning within the TOD sequence is also a pertinent focus of further study. SNS activation should gradually increase, "peaking" at the point of orgasm, possibly decreasing back toward its original level during the detumescence phase (if any). The sexual response cycle (Masters & Johnson, 1966) is characterized by the non-reciprocal coupling of SNS and PNS activity from multiple ANS indices. Therefore, TOD should also be evaluated for the possible corresponding PNS effects superimposed upon SNS dominance. Again, effects from subject gender or narrative task may be present in ANS reactivity within the TOD sequence.

APPENDICES

APPENDIX A

APPENDIX A

Drive Activation Scale: A Manual for Scoring the TOD Sequence

Scoring system for the transformation of manifest to latent content:

Sequence of effects (analogical models of Tumescence-Orgasm-Detumescence (TOD) generated by an advancing unconscious sexual wish (Reyher, 1988).

1. Tumescence

The individual is aware of a pleasant sensory experience such as floating, riding in a car, hair blowing in the wind, or laying on a beach.

2. Drive Intensification - I

Any increase in function or appearance of a new forceful kinetic energy, such as a light becoming brighter, walking faster, a sound getting louder, or a force such as a wind blowing more strongly, or a fear getting more intense.

3. Personification

Any representative of human characteristics related to (1) Physical power (eg., tornadoes, bulls, trucks, trains), (2) Evil (burglers), (3) Fictional characters (witches, monsters), (4) Authority (policemen, military figures, knights, pope, royalty, psychologists).

4. Penetration

Any object that passes through an opening or penetrates the surface of something, going into, but not out of something, such as walking through an open door, a train moving through a tunnel, entering a room, or penetrating skin, as in a dog bite.

5. Copulation

Any periodic motion or beat such as peddling a bike, swimming, running, being chased, walking.

6. Danger

Any sign, warning, or indication of something about to occur, such as thunder before a storm, an alarm, or any communicator of danger.

7. Prohibition

Anything that prevents or stops the progress of directed movement, such as iron bars, a red stoplight, "No", a locked or closed door, also includes trying to scream with no sound emitted.

8. Castration

Departing person or thing, separated, stolen, lost, falling apart, cut, anyone or thing being killed.

9. Drive Intensification - II

Increasing function beyond category #2, such as screaming instead of talking, running instead of walking, also includes tornadoes and hurricanes.

10. Orgasm/Ejaculation

Any climactic event such as falling off a cliff, explosive events, gun shots, also cataclismic events (earthquakes, volcanos), or the threat of being killed or assaulted.

APPENDIX B

APPENDIX B

Manifestations of the Self-Preservation Instinct:

Excluded Content in TOD Scoring

Freud (1914/1957, p. 81) held the biological view that two groups of primal instincts co-exist: the ego instincts (self-preservation), and sexual instincts (preservation of the species). Initially the sexual instinct was supported by the ego instincts; the original caregivers who were essential for survival became the earliest sexual objects. Unlike the sexual instinct, the ego instincts became modified under the influence of necessity and obey the reality principle. Therefore, the two instincts may oppose each other and under conditions of anxiety the self-preserving ego instincts inhibit the advancement of the sexual instinct in the psychic apparatus (Freud, 1916-17/1963, p. 357). The subjects' verbal reports include the TOD sequences which are manifestations of the sexual instinct's continuous unconscious strivings for gratification. In addition, the verbal reports include manifestations of the self-preserving instinct of the ego which are not indicators of drive activation and are excluded from the scoring of episodes and the TOD sequence.

The Oedipal complex is resolved by the ego out of fear of castration by the rival through incorporating the values of the rival and allowing the superego to form out of the id. The superego stands in oversight of the ego's relationship with the id, reacting when the ego allows too blatant derivatives of repressed sexual wishes to traverse the psychic apparatus. When the ego fails to ensure sufficient disguise, the superego may react aggressively with destructive force. The superego is an intrapsychic enforcing agency which is solely inwardly oriented (Freud, 1923/1961, p. 34).

The ego ideal, on the other hand, is both inwardly and outwardly oriented, but was conceptually less clear since its original purpose and relative autonomy changed over time. In Freud's earlier writings (1914/1957, p. 95; 1916-17/1963, p. 429) he viewed the ego ideal (which was separate and distinguished from the superego) as a parental imago that was introjected in order to regain the renounced narcissism of infancy. The ego ideal thereby provides narcissistically-inflated standards against which conscience measures the performance of the actual ego. This results in life-long critical appraisal on the inevitable disparity between them. The standards of the incorporated parental imago (the most critical parent) inside the ego are inflated with the same narcissistic strivings that were previously renounced. The real ego/self can never measure up (Freud, 1916-17/1963, p. 429) and this inherent disparity guarantees negative evaluation. Therefore, due to realistic limitations, the ego anticipates narcissistic injury rather than uplift (Reyher, 1992a). Unfortunately, the ego ideal as a concept did not further develop over time but became blurred in Freud's later writings. Freud later speculated that (1) the ego ideal was a reaction formation which was more or less conceptually absorbed by the superego (1923/1961), and (2) the superego was in the service of the ego ideal in order to secure narcissistic gratification (1933/1964).

Narcissistic injury and uplift take place within the domain of the self-preservation instinct, namely, egoism (taking advantage) and the ego interests. According to Freud (1916-17/1963, p. 394), the individual's ego has a constant need for an "advantage" when faced with environmental objects (as in social settings). The individual feels a realistic anxiety in response to the threat of external danger, which includes narcissistic injury, and compares himself/herself to the magnitude of the threat (egoism) to determine the

response. This anxiety and the individual's subsequent flight or defense reactions are manifestations of the ego's self-preservation instinct. In the research setting the subject typically experiences this anxiety due to the possible narcissistic injury which may be inflicted by the experimenters/authorities for the subject's performance (Reyher, 1992a). The subject may anticipate criticism or even attack for his/her chosen reported dreams, etc., as well as for the uncertain performance during unstructured tasks (such as free association/free imagery). When faced with such disadvantage with the experimenters/authorities, the subject decides that he/she cannot flee and, therefore, defends against the possible narcissistic injury through the use of "security measures" during the verbal report. (Freud, 1926/1959, p.88). These security measures are manifestations of the self-preservation instinct and are separate from the activation of TOD (the sexual instinct).

Reyher (1992a) has extended Freud's formulation of security measures in the domain of interpersonal encounters. In Freud's concept of transference he did not use the concept of "projection" in his discussion of the ego ideal during brief encounters (eg., participation in experiments). Contemporary psychoanalytic theorists, however, view that conscience is projected onto observers or onlookers. According to Reyher, conscience is activated when the ego detects someone observing it, and this is viewed as an extrapsychically cued intra-ego (intrapersonal) reaction. Reyher (1992a) proposed using the term "intrapersonal" to designate the intra-ego domain or realm of the ego ideal in order to distinguish it from the intrapsychic domain of the superego. The term "intra-ego" is appropriate because the ego ideal is a modification of the ego.

Reyher's (1992a) intrapersonal security measures include two types of verbal behaviors: egoistic and submissive. The first category serves egoistic functions and results in a reduction in anxiety and a state of well-being. This includes a mastery-dominant form of interpersonal behavior which is thought to originate in a strong ego's ability to rebel against conscience (Freud's counter-will) and obtain egoistic gratification. The second category, submissive behavior, consists of placating behavior characterized by anxiety and is not associated with feelings of well being. These behaviors indicate a narcissistic injury and are prevalent during a research subject's performance. Placating behaviors originate during those moments when the conscience reactions to the discrepancy between the physical self/performance and narcissistically-inflated standards of the ego ideal seem imminent.

Security measures provide the actual ego protection from narcissistic injury and inhibit the advancement of repressed sexual wishes and, therefore, are excluded from the scoring of episodes and of the TOD sequence. This includes: (1) the introductory comments made at the beginning of reports, as well as (2) the lesser occurring closing remarks made at the end. Also excluded in scoring for TOD are (3) statements of non-compliance during the experiment, (4) verbal references to the experiment itself, and (5) somatic symptoms of the self-preservation instinct.

Introductory Comments

Sometimes subjects use prefacing, introductory comments to initially "set up" the report of a story/event. Such comments precede the report of the onset of the actual story and may include background information, statements of uncertainty, or irrelevant details. In view of the potential for narcissistic injury incurred by the experimental demands, these comments may be seen as security measures in response to the possible critical evaluation of the

subject's selected reports by the experimenters/authorities. The subject is usually making a direct or indirect reference to the sometimes intimate details which he/she is about to disclose, and typically does so with anxious hesitation. This approach appears to be a diversionary or "stalling" tactic which serves to temporarily prevent narcissistic injury, but delays the beginning of the report and, subsequently, the onset of unconscious drive activation. Therefore, these comments are excluded and the first episode is scored at the start of the first specifically reported scene or idea following the preceding initial introductory comments (if any).

Examples:

DREAM:

I used to have this dream all the time when I was a kid, it's really frightening, I haven't had it in years. As the dream starts out, I'm in this haunted house...

FEAR:

Well, I really haven't had what you'd call a really frightening experience, but there was a time when I was back in high school. This one night my friends and I were driving along...

PAIN:

As far as painful goes, I used to play football in high school and sprained my ankle during the last game and that was really painful. I was running down the field...

SEX:

I really don't know what to say for this one. I'll tell you about one with my ex-girlfriend last year. We were alone at her house on the couch...

MEAL:

My favorite meal is Thanksgiving when I go home. It sure beats the dorm food around here. Anyways, we all sit down to eat this huge turkey...

Closing Remarks

These statements are made much less often than the introductory comments and are usually quite brief. The closing statements are not part of the story/event but seem to be more a response to the apparent narcissistic injury the subject is anticipating when finding himself/herself at the end of the verbal report. Subjects cope with the apparent resulting anxiety and concern for how their revealing report will be viewed through the security measure of continued "chatter". This usually includes a nervous or awkward repeat of some feature of the story, or a sweeping statement or generalization which seems to provide some distance from the content (and from perceived threat). This departure from the process of story telling is viewed as an effort by the self-preservation instinct (ego interests) to prevent narcissistic injury in an otherwise threatening social setting. Therefore, it is not viewed as an advancement of unconscious drive activation (TOD) and is excluded from the content of the final episode. NOTE: Closing remarks are most clearly delineated in dream reports when all additional comments following the reported end of the actual dream itself (or waking up) are excluded.

Examples:

DREAM:

...and the last thing I remember was the monster finally catching up to me and grabbing me. Then I woke up and couldn't get back to sleep the rest of the night.

FEAR:

...so at the last moment I swerved and just barely missed the truck and I was like in shock the rest of the drive. I just remember how scary it was seeing that parked truck in the middle of the street that night, and that would be my most frightening experience.

PAIN:

...and while I was lying there screaming in pain the coach and the medics had to help me off the field. I've had some painful injuries since that time but nothing ever hurt as much as that football injury in my senior year.

SEX:

...it felt so good and afterwards we just fell asleep until the next morning. That's probably all I want to say about that one.

MEAL:

...and then after dinner we just all relaxed and talked and drank coffee. I don't know if that's what you mean by a favorite meal, but that's the last good one that I remember having when I was home.

Statements of Non-Compliance during Experiment

Reports of an inability to see images or an inability to verbally comply with the experimental procedures, without an apparent attempt to do so, indicate an aggressive or defiant form of security measure of the self-preservation instinct which can provide a much needed narcissistic uplift. On the other hand, due to the vicissitudes of instinct, such aggression is at times turned against oneself and is characterized by self-effacing or self-deprecating comments. The security measures of both defiance and insufficiency (egoism and submission) fend off possible narcissistic injury and indicate anxiety and extreme disadvantage (Reyher, 1992a). These measures are not indications of

an advancing unconscious wish and are excluded from the scoring of episodes and the TOD sequence.

Example:

I can't see anything, nothing comes to mind right now, just blank, I don't know if this is right, I don't know what else to say, etc.

Reference to Experiment

While the reported imagery of particular scenes may constitute the most commonly observed criteria for an episode, a visual description of the experimental lab does not. Any visual or verbal reference to the experiment or experimental procedure suggests possible difficulty with the task and feelings of disadvantage. Personal questions made to the experimenters/authorities or egoistic attempts to establish a more collegial rapport result from the negative personal comparisons made by the research subjects. Such comments indicate that the subject is having trouble "getting started" or staying on task, and serve to further delay the advancement of unconscious sexual wishes. These comments are excluded from the scoring of episodes and the TOD sequence.

Example:

I'm wondering what you guys are doing, what this experiment is about, I see the room here, the door in front of me, I hear the fan overhead, etc.

Somatic Symptoms

As stated in the Introduction, somatic phenomena may serve as substitutes for, and derivatives of, unconscious sexual impulses which remain in abeyance due to repression. While these alterations in the subject's own body may provide unconscious gratification, they are typically not recognizable as satisfaction (Freud 1926/1959). Reyher (1988) has further extended Freud's findings of somatic substitutes/derivatives of repressed

sexual impulses to apply to the somatic and sensory effects generated by the unconscious advancement of TOD. Somatic symptoms experienced during the subjects' reported mentation are manifestations of either the sexual instincts or the self-preservation instincts, the latter of which are excluded when scoring the TOD sequence. The following is the definition/scoring criteria for these two sources of symptoms:

Sexual instincts. According to Reyher (1988), the somatic mode of representation provides a vehicle for the formation of analogical models which mediate gratification. Subjects' previous somatic/sensory experiences that are reported within the context of dreams, stories, free association tasks, etc., are viewed to be derivatives of a repressed sexual wish. In addition to the report of past somatic/sensory experiences, subjects may actually experience somatic symptoms while participating in the experiment. During the experiment such symptoms may emerge during subjects' verbalized mentation and are also viewed as sexual derivatives which constitute the formation of analogical models. Somatic symptoms which are reported to have occurred previously or which occur during the experiment are both considered to provide further advancement of the unconscious sexual wish and both are scored as TOD waypoints. These somatic symptoms which emerge out of particular mentation are viewed to be a part of the progression of TOD in that particular episode and do not warrant the beginning of a new episode.

Self-preservation instincts. Other types of somatic symptoms to occur during research subjects' participation are the bodily symptoms of real anxiety manifested by the self-preservation instinct of the ego. The threat of external danger and potential narcissistic injury in the experimental setting results in an increase in "sensory attention" and motor tension. This awareness of bodily sensations promotes a readiness for danger and is viewed

by Freud (1916-17/1963, p. 394) to be a preparation for fight or flight. Subjects' somatic symptoms manifested by the self-preservation instinct are differentiated from those of the sexual instinct in two ways when scoring the TOD sequence:

1. Any reported somatic symptoms which immediately follow the verbal instructions (demands) of the experimenters/authorities are viewed to be the result of anxious compliance by the subject in order to avoid anticipated narcissistic injury.

2. Any reported somatic symptoms which the subject explicitly states to result from real anxiety, are also viewed to be related to the threatening nature of the experimental procedure.

These two examples of somatic symptoms are manifestations of the self-preservation instinct of the ego and are excluded from the scoring of episodes and the TOD sequence.

APPENDIX C

APPENDIX C

Sample Verbatim Protocols

Subjects varied in the number of different waypoints (and episodes) that were utilized in order to complete TOD, and this also varied across conditions. The following are sample narratives for the five experimental conditions and their paired post-free imagery periods. The particular samples were selected for their use of numerous different waypoints, so as to better illustrate to the reader the sequencing of derivatives in the formation of analogical models (TOD).

Episodes. The number of episodes in the particular sample conditions ranged from three in the Pain condition and Meal-free imagery period to seven in the Pain- and Fear-free imagery periods. The beginning of each episode was marked off by double slash marks (//). The first episode in each narrative begins with the first specific scene that was presented. As can be seen in numerous narratives, the "introductory comments" are excluded from the scoring of TOD waypoints and/or somatic symptoms (see Appendix B).

Quartiles. Superimposed upon the scored episodes are quartiles. Immediately following the appropriate episode markers are the quartile values (eg., Q1), which are assigned to each of the subsequent waypoints.

Waypoints. Waypoint codes are in brackets following scored derivatives (eg., [Tum]). As can be seen in the protocols, some derivatives may be condensed and depict two or more facets (waypoints) of a sexual wish (eg., [Penet/Cop]). Scored waypoints which are somatically depicted are additionally scored as "somatic symptoms", and are also underlined (eg., [Cast]).

Prompts. An example of an experimenter prompt is shown in the Pain-free imagery. Such prompts were made if a subject stopped reporting mentation for 30 seconds. Only one prompt could be made per free imagery period (see Method section).

Waypoints

1. Tumescence.....Tum
2. Drive Intensification - I.....DI-I
3. Personification.....Pers
4. Penetration.....Penet
5. Copulation.....Cop
6. Danger.....Dang
7. Prohibition.....Pro
8. Castration.....Cast
9. Drive Intensification - II.....DI-II
10. Orgasm/Ejaculation.....Org
11. Detumescence.....Det

Dream Condition

Male Subject

(five episodes)

S: I was young when I had this dream, it haunted me, I used to have it off and on for over a year. || (Q1) It used to be that I'd be out somewhere, at a friend's [Tum] house down, in the neighborhood down the street [Tum] playing [Tum], or at a picnic, or doing something [Pro] at someone else's house, there would be a lot of people [DI-I] out in the driveway [Tum] or in front of their house. || And all of a sudden storm clouds [Dang] would come in [Penet] and, um, get pitch black [Dang]

all of a sudden, and there would be a tornado [Pers/Dang] that I could see. || (Q2) And as soon as this happened, everybody would run [Cop/DI-I] into [Penet] the house. || (Q3) But I couldn't [Pro] scream [Org] and I couldn't [Pro] run, and just running [Cop/DI-I], trying to get from someone else's house back to my house, just running [Cop/DI-I], and I could see the garage [Tum], my parents walking [Cop] in [Penet] and the garage [Tum] door coming down [Pro], and it slowly gets down [Pro]. || (Q4) And just as I get there and almost get underneath [Penet], it closes [Pro], and, uh, it's, I'm pounding [Cop/DI-II] and they can't [Pro] hear me and I can't [Pro] scream [Org], and, uh, I end up laying [Det] on the garage [Tum] door [Pro], and sometimes go to the side of the house or on the porch next to the door [Pro], and I usually woke up [Pro] then.

Dream-Free Imagery

(four episodes)

S: I'm sweating a little, my lips are dry. || (Q1) Um, I'm remembering another dream I used to have about being attacked [Dang] by a dog [Pers/Dang] when I was a little kid, he came up and bit me [Org/Cast] in the stomach. || (Q2) And, uh, I used to have a dream about the, about a rubber, a plastic, rubber duck [Tum/Pers], that used to come, fly [Org] into [Penet] my window [Tum] every night and come right at my face [Dang]. || (Q3) And I'd scream [Org] and wake up [Pro] on the floor and this happened every night for about three [Tum] months...my toes [Tum] are cold [Cast]...I was jittery [DI-I], now I'm starting to relax [Det] a little more. || (Q4) Just thinking about my Mom, my girl(friend) [Tum], my sister...a little jittery [DI-I], kind of warm [Tum].

Fear Condition

Male Subject

(four episodes)

S: Well, I was going home a couple of weeks ago. || (Q1) It was probably around, I don't know [Pro], ten or eleven at night, I was driving down [Penet] the road [Tum] and it was raining really hard [DI-I/Dang], there weren't many cars [Tum] on the road [Tum] so I was probably going about 70 [Dang] and the speed limit [Pro] was 65, (cough) [Cast] and I was driving in [Penet] the left lane [Tum] and there was no traffic so I decided to get over into [Penet] the right lane [Tum]. || (Q2) And I got over, and man [DI-I], I figured I hit [Org] a patch of water [Dang] or I had a blow-out [Cast] in my tire [Tum] or something [Pro], but I started fishtailing [Cop/DI-II/Dang], did about three [Tum] fishtails [Cop/DI-II/Dang] and, uh, a three-sixty or two [Cop/DI-II/Dang] and, uh, hit [Org/Cast] my head [Tum] on the door. || (Q3) Good thing oncoming traffic was pretty far [Pro], about a mile back [Pro], because nobody was around and I ended up on the left shoulder [Det], the car stalled [Det]. || (Q4) I got it going again and everything seemed all right, but I probably drove about 45 or 50 [Pro] for the rest of the trip.

Fear-Free-Imagery

(seven episodes)

S: || (Q1) Well, uh, I'm just sort of [Pro] thinking about how, how nervous [Dang] I was driving after that, I thought I was gonna crash [Org/Cast]. || I didn't know [Pro] if my car [Tum] was messed up [Cast] or not because I didn't really [Pro] take a good look at it, it was in the dark [Pro]. || (Q2) Well, I finally made it [Org] to where I was

going. || I ended up getting a flat [Det] tire [Tum], the tire [Tum] went flat [Det]. || (Q3) Thinking about how I'm still a little nervous [Dang] when I drive when it's sort of raining [Dang], or when there's water [Dang] on the road [Tum]. || I drove home yesterday and I was a little nervous [Dang], just, you know, get home without [Pro] crashing [Org/Cast], I guess. (cough) [Cast] || (Q4) Police [Pro] are also starting to get tougher [Dang] now.

Pain Condition

Female Subject

(three episodes)

S: I was skiing this summer and, uh, my friend, my mom, and my two sisters were with me. || (Q1) We were just getting ready to go back in [Penet] and I wanted to go one more time, so I was getting up in our boat [Tum] on the ladder and I slipped [Dang], and my (toe)nail [Tum] caught the end of the ladder [Dang] and ripped it up [Cast], but I hit [Org/Cast] my knee at the same time really hard [DI-I] and I was all worried [Dang] about my knee. || (Q2) Then I got in [Penet] the boat [Tum] and my mom said 'Look at your toe' [Tum], and it was all ripped up [Cast] and she wanted to take me to the doctor to make sure it was clean, or whatever [Pro]. || (Q3.5) The worst part [DI-I] was going to the doctor because he, it didn't [Pro] hurt too bad [Cast], but he, he pulled it completely up as far as it would go [Dang] and then started washing [Cop] underneath it [Penet], and, uh, squirting [Org] stuff underneath there [Penet] and I could feel it [Org], it was just so horrible [Cast].

Pain-Free Imagery

(seven episodes)

S: I feel a little tingling. || (Q1) I can remember the doctor telling me where to sit [Det] in the waiting room while I sat there. || Then, I could see everybody's face [Tum] there, it hurt [Cast], but everybody else's face [Tum] was worse [Dang], I think they were, they all thought it was so much worse [DI-I] than it really was, my dad especially, he couldn't [Pro] stand it because he hates [DI-I] going to the doctor's. || (Q2) I can picture it now because it still hasn't [Pro] grown back. || I can picture myself walking [Cop] around for a couple of days with my foot [Tum] in the air so it wouldn't [Pro] catch on anything else [Dang]...

E: You still have some time left.

S: || (Q3) I'm trying [Pro] to think if there's somebody else that I'm supposed to call today, I can't think [Pro] of who it was. || I can picture our telephone and both of us jumping [Org] up. || (Q4) My roommate was taking a nap [Det] today, and she went to answer the phone and didn't know [Pro] who it was for a while, she was still asleep [Det].

Sex Condition

Male Subject

(six episodes)

S: Um, uh, this was after I went out with this girl, we went to a party and were having some beer, so we were kind of drunk, I guess both of us. || (Q1) And we went back to her dorm, she's got a little couch that pulls out into a bed and so we were just sleeping on that, and, uh, we were both not [Pro] stupidly drunk [DI-I], but we were pretty buzzed [DI-I],

both pretty horny. [DI-I] || We started going at it [Cop], I can remember feeling [Cop] her body, it was kind of cold [Cast] and rainy out that night so it was nice [Tum] to get under [Penet] the covers with her, warm [Tum], I could feel her warm [Tum] body, just feel her body all over [Cop], and uh, we started making out [Cop], going at it [Cop/DI-I], feeling her up [Cop]. || (Q2) Uh, then she's giving me oral sex [Penet/Cop] which felt good [Tum], it was just like heaven [DI-II], I felt like I was on cloud nine [Tum], just laying there, nice and warm [Tum], good looking girl. || And then we started having sex [Penet/Cop], which is always fun [DI-II], and we were going at it [Penet/Cop] for a while, we were going [Penet/Cop] in different positions. || (Q3) We ended up doing it doggie style [Penet/Cop], which is, you know, a position I like, she was kind of buzzed up [DI-I] so she didn't mind, it was pretty fun [DI-II], and then uh, we both climaxed [Org]. || (Q4) And just went to sleep [Det], I just fell asleep [Det] and then woke up the next morning.

Sex-Free Imagery

(4 episodes)

S: Uh, right now I feel kind of relaxed, kind of like I would after that, uh, situation, like when it's good I feel relaxed. || (Q1) I can picture the dorm room, and the scene outside looking out her window, I can see the Grand River [Tum] and all the woods [Tum] and stuff [Pro], it was kind of a cool [Tum] situation, it was kind of raining out, it was dark [Pro], and the street lights were flashing [Cop], and the rain was dripping down the windows, and, uh, I remember just looking out there, just kind of reminded me of a movie scene. || (Q2) And then we got in [Penet] bed, I remember that feeling, just being warm [Tum],

because it was so cold [Cast] and dreary outside, I was just warm [Tum] in bed under [Penet] the covers, and, uh, her body was extremely warm [Tum] next to mine, we were both naked, that felt good [Tum], I can just remember touching her body [Tum], it was like, not so much [Pro] silky feeling, but just soft, soft skin [Tum], and, uh, it was just an exciting feeling [DI-I] but relaxing [Tum] at the same time. || (Q3) And, uh, I can just remember I got sick [Org] that night for some [Pro] reason, I remember that, I was throwing up [Org] in the bathroom. || (Q4) But, uh, in the morning, I just remember I slept [Pro] through the morning, I woke up late and just felt great [Det], very relaxed [Det], satisfied [Det], that's about all [Pro].

Meal Condition

Female Subject

(six episodes)

S: I love eating prime rib at the Steak and Ale, uh, I love rare meat, not rare-rare, but juicy rare. || (Q1) Anyways, the steak [Tum] came on a big plate, and then it's just like saturated in the juice, and it had a baked potato [Tum] and then some side dish of vegetables, uh, broccoli [Tum], cauliflower, carrots [Tum], and stuff [Pro]. || For the sauce on top of the steak [Tum], I had them cut it out [Cast], and you can just see it oozing into [Penet] the pores of the steak [Tum]. || (Q2) And when you put it into [Penet] your mouth [Tum] the fat just like melts [Det] with it, and you just don't want the steak [Tum] to get smaller [Det], you just want to keep on eating [Penet/Cop] it. || The potato [Tum] was, uh, it wasn't [Pro] real hot [DI-I] that you're burning [Cast] your tongue [Tum], but it was really good [Tum] for some reason [Pro], we used to eat [Penet/Cop] them all the time, but this time

the potato [Tum] was really good [Tum]. || (Q3) Uh, the desert was, uh, chocolate mousse pie [Tum] and it was, uh, you know, cut [Cast] in a triangle and it had its layer of pudding and then the chocolate layer, but on top it had, uh, thin shavings of chocolate candy. || (Q4) And, uh, I just picked it up to eat it [Penet/Cop], it was really good [Tum], just, uh, the rich-tasting [DI-I] stuff, and it was so rich [DI-II] that you couldn't [Pro] finish it all.

Meal-Free Imagery

(three episodes)

S: || (Q1) I'm sitting at the restaurant, I can see the restaurant, I can hear the activity [DI-I] around there, the waitresses walking [Cop] back and forth, the clinking [DI-I] of the silverware, I'm getting cooler [Det] now instead of warmer [Tum] (cough) [Cast], uh, the, the atmosphere in the restaurant was like a homey place [Tum], you could almost like turn it into a bunch of people just eating [Penet/Cop] at two long tables, with bronze pots [Tum] and pans hanging on the wall, you could smell [Tum] the food that they, they served bread [Tum] before it, and you could smell [Tum] the bread [Tum] coming out. || (Q2) That reminds me of the time when we were in girl scout camp and we were making this bread [Tum] for the first time and just waiting anxiously for it to be cut [Cast], because it was still rising, but you could smell it [Tum], it was in a cabin, like when I pictured the restaurant with everyone eating [Penet/Cop] in two rows, or two benches. || (Q3.5) And then going outside after the bread [Tum], it was all wintery [Cast], cold [Cast], and we didn't [Pro] want to go outside, but we had to because we were done eating [Penet/Cop] and they had to clean up.

REFERENCES

REFERENCES

- Abel, G. (1978). Measuring women's sexual arousal during sleep. Psychology Today, 12, 21.
- Bauer, R. M., & Craighead, W.E. (1979). Psychophysiological responses to the imagination of fearful and neutral situations: The effects of imagery instructions. Behavior Therapy, 10, 389-403.
- Bennett, T.L. (1982). Introduction to Physiological Psychology. Belmont, CA: Wadsworth, Inc.
- Berntson, G.G., Cacioppo, J.T., Quigley, K.S., & Fabro, V.T. (1993). Autonomic space and psychophysiological response. Psychophysiology, 31, 44-61.
- Blum, G.S. (1949). A study of the psychoanalytic theory of psychosexual development. Genetic Psychology Monographs, 39, 3-99.
- Breurer, J., & Freud, S. (1955). Studies on hysteria. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 2, pp. 1-335). London: Hogarth Press (Original work published 1895).
- Campbell, D.T., & Fisk, D.W. (1959). Convergent and discriminate validation by the multitrait-multimethod matrix. Psychological Bulletin, 56, 81-105.
- Cannon, W.B. (1927). The James-Lang theory of emotions: A critical examination and an alternative. American Journal of Psychology, 39, 106-124.
- Carlson, N.R. (1986). Physiology of Behavior. Newton, Mass.: Allyn & Bacon, Inc.
- Carroll, D., Marzillier, J.S., & Merian, S. (1982). Psychophysiological changes accompanying different types of arousing and relaxing imagery. Psychophysiology, 19, 75-82.

- Cowden, L. (1992). Super-ego development in adults following paternal separation during different psychosexual stages. Unpublished doctoral dissertation, Michigan State University.
- Dekker, J., & Everaerd, W. (1988). Attentional effects on sexual arousal. Psychophysiology, 25, 45-54.
- Della Corte, M. (1979). The effect of preceding stimulus conditions on spontaneous visual imagery. Unpublished Master's Thesis, Michigan State University.
- Edelberg, R.S. (1972). Electrical activity of the skin: Its measurement and uses in psychophysiology. In N.S. Greenfield & R.A. Sternbach (Eds.), Handbook of Psychophysiology. New York: Holt, Rinehart, & Winston, Inc.
- Edmonston, W.E. (1981). Hypnosis and Relaxation: A Modern Verification of an Old Equation. New York: Wiley.
- Fisher, C. (1966). Dreaming and sexuality. In R.M. Loewenstein, L.M. Newman, & A.J. Solnit (Eds.), Psychoanalysis - A General Psychology: Essays in Honor of Heinz Hartmann. New York: International University Press.
- Fisher, C., Byrne, J., Edwards, A., & Kahn, E. (1970). A psychophysiological study of nightmares. Journal of the American Psychoanalytic Association, 18, 747-782.
- Fisher, C., Cohen, H.D., Schiavi, R.C., Davis, D., Furman, B., Ward, K., Edwards, A., & Cunningham, J. (1983). Patterns of female sexual arousal during sleep and waking: Vaginal thermo-conductance studies. Archives of Sexual Behavior, 12 (2), 97-122.
- Fisher, C., Gross, J., & Zuch, J. (1965). Cycle of penile erection synchronous with dreaming (REM) sleep. Archives of General Psychiatry, 12, 29-45.
- Fisher, L.E., & Kotses, H. (1974). Experimenter and subject sex effects in the skin conductance response. Psychophysiology, 11, 191-196.

- Freud, S. (1953). The psychology of the dream-process. VII The interpretation of dreams. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 5, pp. 509-622). London: Hogarth Press. (Original work published 1900).
- Freud, S. (1953). Three essays on the theory of sexuality. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 7, pp. 125-248). London: Hogarth Press. (Original work published 1905).
- Freud, S. (1955). A child is being beaten: A contribution to the study of the origin of sexual perversion. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 17, pp. 175-204). London: Hogarth Press. (Original work published 1919).
- Freud, S. (1957). Repression. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 14, pp. 141-158). London: Hogarth Press. (Original work published 1915).
- Freud, S. (1959). Inhibitions, symptoms, and anxiety. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 20, pp. 75-176). London: Hogarth Press. (Original work published 1926).
- Freud, S. (1961). The ego and the id. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 19, pp. 1-68). London: Hogarth Press. (Original work published 1923).
- Freud, S. (1961). The economic problem of masochism. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 19, pp. 155-172). London: Hogarth Press. (Original work published 1924).
- Freud, S. (1961). Some psychological consequences of the anatomical distinction between the sexes. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 19, pp. 248-263). London: Hogarth Press. (Original work published 1925).

- Freud, S. (1962). On the grounds for detaching a particular syndrome from neurasthenia under the description "anxiety neurosis". In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 3, pp. 87-122). London: Hogarth Press. (Original work published 1895).
- Freud, S. (1957). On narcissism: An introduction. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 14, pp. 67-102). London: Hogarth Press. (Original work published 1914).
- Freud, S. (1963). Resistance and repression. XIX The complete introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud. (vol. 16, pp. 286-302). London: Hogarth Press. (Original work published 1916-17).
- Freud, S. (1963). Sexual life of human beings. XX The complete introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 16, pp. 303-319). London: Hogarth Press. (Original work published 1916-17).
- Freud, S. (1963). Some thoughts on development and regression - aetiology. XXII The complete introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 16, pp. 339-357). London: Hogarth Press. (Original work published 1916-17).
- Freud, S. (1963). Anxiety. XXV The complete introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (Vol. 16, pp. 392- 411). London: Hogarth Press. (Original work published 1916-17).
- Freud, S. (1963). Libido theory and narcissism. XXVI The complete introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud. (vol. 16, pp. 412-430). London: Hogarth Press. (Original work published 1916-17).

- Freud, S. (1964). Anxiety and instinctual life. XXXII New introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 22, pp. 81-111). London: Hogarth Press. (Original work published 1933).
- Freud, S. (1964). Femininity. XXXIII New introductory lectures on psychoanalysis. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 22, pp. 112- 135). London: Hogarth Press. (Original work published 1933).
- Freud, S. (1966). Project for a scientific psychology. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud (vol. 1, pp. 283-398). London: Hogarth Press. (Original work published 1895).
- Gottschalk, L.A., Gleser, G.C., & Springer, K.J. (1963). Three hostility scales applicable to verbal samples. Archives of General Psychiatry, 9, 254-279.
- Habermas, J. (1971). Knowledge and Human Interest. (J.J. Shapiro, Trans.) Boston: Beacon Press.
- Hall, C.S., & Van de Castle, R.L. (1965). An empirical investigation of the castration complex in dreams. Journal of Personality, 33, 20-29.
- Hall, C.S., & Van de Castle, R.L. (1966). The Content Analysis of Dreams. New York: Appleton-Century-Crofts.
- Hartmann, E. (1981). The strangest sleep disorder. Psychology Today, 4, 14-15.
- Hassett, J. (1978). A Primer of Psychophysiology. San Francisco: W.H. Freeman & Co.
- Hoon, P.W., Wincze, J.P., & Hoon, E.F. (1976). Physiological assessment of sexual arousal in women. Psychophysiology, 13, 196-204.
- Jones, E. (1959). On the Nightmare. New York: Grove Press, Inc.

- Karacan, I., Goodenough, D.R., Shapiro, A., & Starker, S. (1966). Erection cycle during sleep in relation to dream anxiety. Archives of General Psychiatry, 15, 183-189.
- Kendall, M.G. (1948). Rank Correlation Methods. London: Griffin.
- Kline, P. (1972). Fact and Fantasy in Freudian Theory. London: Methuen.
- Korff, J., & Geer, J.H. (1983). The relationship between sexual arousal experience and genital response. Psychophysiology, 20, 121-127.
- Lang, P.J. (1984). Cognition is emotion: Concept and action. In C.E. Izard, J. Kagan, & R.B. Zajonc (Eds.), Emotions, Cognition, and Behavior (pp. 192-226). New York: Cambridge University Press.
- Lewis, S.A. (1969). Experimental induction of castration anxiety and anxiety over loss of love. Unpublished doctoral dissertation, Yeshiva University.
- Lindzey, G., & Hall, C.S. (1965). Theories of Personality: Primary Sources and Research. New York: Wiley.
- Masters, W.H., & Johnson, V.E. (1966). Human Sexual Response. Boston: Little, Brown.
- Morshige, H., & Reyher, J. (1975). Alpha rhythm during three conditions of visual imagery and emergent uncovering psychotherapy: The critical role of anxiety. Journal of Abnormal Psychology, 84, 531-538.
- Moses, I., & Reyher, J. (1985). Spontaneous and directed visual imagery: Image failure and image substitution. Journal of Personality and Social Psychology, 48, 233-242.
- Pitcher, E.G., & Prelinger, E. (1963). Children Tell Stories: An Analysis of Fantasy. New York: International Universities.
- Pivick, R.T. (1978). Tonic states and phasic events in relation to sleep mentation. In A.M. Arkin, J.S. Antrobus, & S.J. Ellman (Eds.), The Mind in Sleep: Psychology and Psychophysiology. Hillsdale, NJ: Lawrence Erlbaum Assoc.

- Rechtschaffen, A. (1973). The psychophysiology of mental activity during sleep. In F.J. McGuigan & R.A. Schoonover (Eds.), The Psychophysiology of Thinking. New York: Academic Press.
- Reyher, J. (1977). Spontaneous visual imagery: Implications for psychoanalysis, psychopathology, and psychotherapy. Journal of Mental Imagery, 2, 253-274.
- Reyher, J. (1978). Emergent uncovering psychotherapy: The use of imagoic and linguistic vehicles in objectifying psychodynamic processes. In J.L. Singer & K.S. Pope (Eds.), The Power of Human Imagination. New York: Plenum Press.
- Reyher, J. (1982). An empirically derived sequence in the unfolding of a repressed sexual wish. Unpublished manuscript.
- Reyher, J. (1988). Transforming manifest content into latent content. Unpublished manuscript.
- Reyher, J. (1991). A comprehensive scale on scoring the spontaneous mentation for tumescence - orgasm - detumescence (TOD). Unpublished manuscript.
- Reyher, J. (1992a). The fate of narcissistic strivings in human encounters: Vicissitudes of the primordial ego. Unpublished manuscript.
- Reyher, J. (1992b). The Lakatosian perspective and accessing the Freudian domain. Unpublished manuscript.
- Reyher, J., & Della Corte, M. (1985). Dreams: Disguised wish-fulfillment or distorted conflict representation. Unpublished manuscript.
- Richardson, A. (1969). Mental Imagery. London: Routledge & Kegan Paul, Limited.
- Schafer, R. (1976). A New Language for Psychoanalysis. New Haven: Yale University Press.
- Schafer, R. (1984). The pursuit of failure and the idealization of unhappiness. American Psychologist, 39, 398-405.

- Schneider, S.C.S. (1960). An analysis of presurgical anxiety in boys and girls. Unpublished doctoral dissertation, University of Michigan.
- Schwartz, B.J. (1955). The measurement of castration anxiety and anxiety over loss of love. Journal of Personality, 24, 204-219.
- Schwartz, B J. (1956). An empirical test of two Freudian hypotheses concerning castration anxiety. Journal of Personality, 25, 318-327.
- Smith, T.W., Houston, B.K., & Zurawski, R.M. (1984). Finger pulse volume as a measure of anxiety in response to evaluative threat. Psychophysiology, 21, 260-264.
- Snyder, F. (1967). In quest of dreaming. In H.A. Witkin & H.B. Lewis (Eds.), Experimental Studies of Dreaming. New York: Random House.
- Stern, R.M., & Sison, C.E. (1990). Response patterning . In J.T. Cacioppo & L.G. Tassinary (Eds.), Principles of Psychophysiology: Physical, Social, and Inferential Elements. (pp. 193-215). Cambridge, Mass: Cambridge University Press.
- Tart, C. (1964). A comparison of suggested dreams occurring in hypnosis and sleep. International Journal of Clinical and Experimental Hypnosis, 7, 163-170.
- Taylor, W.B., Moldofsky, H., & Furedy, J.J. (1985). Heart rate deceleration in REM sleep: An orienting reaction interpretation. Psychophysiology, 22 (1), 110-114.
- Tobias, R.T. (1993). Ego-ideal and superego differences among males and females. Unpublished doctoral dissertation, Michigan State University.
- Trosman, H., Rechtschaffen, A., Offenkrantz, W., & Wolpert, E. (1960). Studies in the psychophysiology of dreams. IV Relation among dreams in sequence. Archives of General Psychiatry, 3, 602-607.
- Underwood, B. (1949). Experimental Psychology: An Introduction. New York: Appleton-Century-Crofts.
- Walker, H.M., & Lev, J. (1953). Statistical Inference. New York: Henry Holt & Company.

- Wenger, M.A., Averill, J.R., & Smith, D.D.B. (1968). Autonomic correlates of the sexual response cycle. Psychophysiology, 4, 468-478.
- White, K.D. (1977). Salivation: A review and experimental investigation of major techniques. Psychophysiology, 14, 203-212.
- White, K.D. (1978). Salivation: The significance of imagery in its voluntary control. Psychophysiology, 15, 196-203.
- Zikmund, V. (1972). Physiological correlates of visual imagery. In P.W. Sheehan (Ed.), The Function and Nature of Imagery. New York: Academic Press.
- Zuckerman, M. (1971). Physiological measures of sexual arousal in the human. Psychological Bulletin, 75, 347-356.