

AN EXPERIMENTAL INVESTIGATION OF
EXHIBITIONISM AND SCOPTOPHILIA

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Paul B. Koons, Jr.

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ABSTRACT

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This study was undertaken as the initial stage in the empirical investigation of the psychoanalytic concepts of the psychosexual impulses of exhibitionism and scoptophilia. Both impulses are given the status of components of the sexual impulse by Freud (1938); exhibitionism is defined as taking pleasure in the display of the genitals, scoptophilia is defined as the sexualization of the sense of sight. A review of the literature indicates that, while these two impulses have been used in the dynamic explanation of a wide variety of behaviors both normal and neurotic, there have been no experimental studies to support the several, and often contradictory conceptualizations of the two impulses.

A modification of Blum's (1954) design for producing perceptual vigilance and defense was employed to test the hypotheses that the presence in the environment of cues suggestive of the impulses of exhibitionism and scoptophilia would arouse vigilant and defensive behavior depending on the level of awareness at which the cues were presented.

Four groups of ten subjects under the conditions: Vigilance-exhibitionism, Vigilance-scoptophilia, Defense-exhibitionism, and Defense-scoptophilia, were presented with a series of critical and neutral stimulus pictures tachistoscopically.

The results clearly confirm the hypotheses. Additional data was collected in the attempt to isolate the specific stimulus factors involved.

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The data from a control group narrowed the factors to the verbal statements used to sensitize the subject to the visually presented cues. Two further control groups were employed in an attempt to determine which aspects of the verbal statements were crucial in the confirmation of the hypotheses.

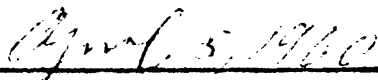
The results were interpreted as lending support to a preliminary operational definition of exhibitionism and scopophilia. A more complete definition was offered as the foundation for a program of future research on these concepts.

References:

- Blum, G. S. An experimental reunion of psychoanalytic theory with perceptual vigilance and defense. J. abnorm. soc. Psychol., 1954, 49, 94-98.
- Freud, S. Three contributions to the theory of sex. (Brill translation) New York: Modern Library, 1938.

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by

Paul B. Koons, Jr.

A Thesis

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INTRODUCTION

In the development of psychoanalytic theory Freud (1933) denominated as partial or component aspects of the sexual impulse¹ the libidinal energies proceeding from the erogenic zones of the body: oral, anal, urethral and genital. In psychosexual development each of these zones becomes sensitized in progression, and becomes, for a time, the outlet for the discharge of sexual excitation. In normal development, the genital zone finally achieves primacy in this function, concentrating excitation and discharging it, regardless of the erogenic zone in which excitation has originated.

These zones of the body are, however, not the only sources of erogenous stimulation. The entire surface of the skin, the mucous membranes, the kinesthetic, vestibular and cutaneous senses and the senses of sight and hearing can also serve both sexual arousal and discharge functions. Impulses arising from these sources are subsumed under the partial impulses (Freud, 1933). For example, pleasure aroused by painful stimulation of the skin is felt to be the erogenic basis of all types of masochism (Fenichel, 1946). "Scopophilia...(is)...the sexualization of the sense of looking... a sexual impulse of looking..." (Fenichel, 1946, p. 71); "...the looking

1. In German: Trieb, translated in earlier psychoanalytic works as instinct. Impulse, or drive, seems more consistent with general psychological theory, however. Accordingly, impulse will be the translated meaning employed in the present study.

perversion may attain great importance for the sexual life... (and)... furnishes the strongest motive power for the formation of symptoms" (Freud, 1938, p. 593). The counterpart to scopophilia is exhibitionism; it "...has the character of a partial instinct; any child derives pleasure from the display of his genitals, and, in pregenital times, of the other erogenous zones and their functions" (Fenichel, 1946, p. 345; Freud, 1938). Further, both impulses have a common precursor in the erogeneity of viewing oneself (Freud, 1938); according to Fenichel (1946) this is an attempt to increase the self esteem. It is to the investigation of the impulses of exhibitionism and scopophilia that this paper is devoted.

According to Fenichel (1946), a leading exponent of orthodox psychoanalytic theory, the impulses of exhibitionism and scopophilia are subject to all the vicissitudes suffered by the other components of the sexual drive: sublimation, repression, displacement and hypercathexis. A difficulty arises, however, in the precise determination of which behaviors result from some ego process mediating or inhibiting the expression of exhibitionism and scopophilia rather than some other sexual impulse. As a result the vicissitudes of the exhibitionistic and scopophilic impulses have been used to explain a variety of behaviors with no empirical foundation for their use in this manner. We turn now to an examination of some of these behaviors.

Direct expressions: A few authors report that the direct, unaltered expression of both impulses is to be found in normal behavior in adulthood (Bergler, 1949; Bergler, 1954; Rickles, 1950; Stekel, 1957). Unchanged exhibitionistic behaviors are recognized by these authors in:

interests in physical qualities and sports (Schneider, 1950); and clothing (Fenichel, 1946). Rickels (1950) states that social nudism is a non-pathological form of exhibitionism, though Karpman (1954) questions this pronouncement that such cultists are "normal" exhibitionists. However, London and Caprio (1950) support the view that exhibitionism finds normal expression in nudist activities, as well as in burlesque shows. Burlesque, they feel, gratifies the exhibitionistic erotism of the performer as well as providing scopophilic satisfactions for the spectator. On the other hand, Lorand (1950) concludes on the basis of the analysis of five nudists that the practice of nudism has a neurotic coloring. Flugel (1950) in one of the few theoretical papers on nudism, however, postulates beneficial influences stemming from nudism. Modesty, according to Flugel (1950) is an inhibition, or reaction formation against the primitive joy in seeing and exhibiting the naked body. It may also be a symbolic rebellion against home and societal restrictions and artificialities. Testimonials of nudists are considered to corroborate this analysis but Flugel (1950) cites no data.

Direct expressions of scopophilia are intermingled with the above expressions of nudism and also in the attendance at burlesque shows. However, commercial exhibitions of female nudity (theater, night club, burlesque, and private club or party) are legally prohibited, in the U.S., from permitting genital display (Karpman, 1954). Unclothed sports settings, such as the YMCA, the gymnasium, and often the dressing room provide other opportunities for the gratification of scopophilia (Fenichel, 1946; Ferenczi, 1950; Kinsey, 1953; Lorand, 1950).

Many males exhibit their genitalia to the female or male partner in sexual activity (Kinsey, 1953). The Kinsey report (1953) suggests that the

major underlying factor is erotic arousal stemming from the anticipation that such genital display will arouse the other person. Further, some women will exhibit their genitalia to the male partner during coitus, but only a few of them report being aroused by the action. Normally "many" males are aroused by seeing female genitalia; fewer females (46%) in the study reported being aroused by seeing male genitalia (Kinsey, 1953). The data of this report also gives some indication that tendencies toward exhibitionistic and scopophilic behaviors are greater in men.

Other writers, notably Karpman (1954), and Stekel (1952) indicate that the direct expression of both exhibitionism and scopophilia may serve an arousal function in the preparation for sexual intercourse, where genital maturity has been achieved. As Fenichel (1946) points out:

"The more or less complete achievement of ... (genital primacy)... is the prerequisite for a successful sublimation of that part of pre-genitality... (i.e., the partial impulses)... which is not used sexually in the fore-pleasure mechanisms" (p. 142).

Sublimations: At the same time that direct expressions of pregenital impulses are to be found in normal genital sexuality, a number of sublimations are also possible, as the preceding quotation indicates. Sublimation, according to orthodox psychoanalytic theory, represents a change in both the aim and object of an impulse while permitting full discharge of the excitation in a non-sexual context (Fenichel, 1946). Change in aim would then involve a displacement of the impulse energy to some other, non-sexual behavior; change in object would involve selecting a non-sexual instrument from the environment on which to discharge the impulse energy. For example, sublimations of exhibitionism are felt to underlie such behaviors as: acting (Bergler, 1949; Fenichel, 1946), writing (Fenichel, 1946; Schneider,

1950), painting (Ferenczi, 1950), and oratory (Fenichel, 1946; Ferenczi, 1950). In these behaviors the sexual object of the impulse has been replaced by a non-sexual one, i.e., rather than the exhibition of the genitals there is an exhibition of more complex charms such as a painting, a poem, a speech, or simply talent in general.

In the case of one man, becoming a dealer in optical instruments was felt by Schneider (1950) to be the sublimation of a compulsive scopophilia which had, in turn, been the defense against exhibitionism. This Schneider (1950) interprets as a lower form of sublimation in that the original impulse can be traced in current behavior, although the activity has changed to a productive concern with non-sexual objects. A higher level of sublimation, in which the original impulse is more masked, is to be found in a productive creativity (Schneider, 1950), or a real interest in research (Freud, 1950b).

Abraham (1949) distinguishes two forms of sublimation of the scopophilic impulse. In one form the original impulse is readily apparent, though diverted from original sexual aim and object, to an active interest in the search for knowledge, or in the investigations of the scientist. In one of Abraham's (1949) cases, a student was preoccupied in his scientific research with problems related to the origin of things. This was felt to represent the sublimation of the student's childhood interest in birth and procreation. In the other form of sublimation, according to Abraham (1949), the scopophilic impulse is not apparent. In this second form the aim is transferred from the incestuous, which one must not see, to the intangible, which one cannot see. This, then, provides the impulse energy, and hence the motivation, for philosophic and theoretical thinking (Abraham, 1949).

The only experimental studies on direct expressions of exhibitionism and scopophilia in the psychological literature are to be found in the observational data of the Kinsey report (1953). Further, as Blum (1953) points out:

It is no accident that the mechanism of sublimation remains virtually neglected from a research standpoint. The elusive nature of the concept itself makes any operational definition exceedingly tenuous. Its differentiation from displacement and reaction formation hinges upon the experimenter's ability to detect the absence of countercahexis. For example, overtly similar behavior may reflect the operation of either sublimation or reaction formation, depending upon the state of energy discharge. A further complication is provided by the fact that the term sublimation, according to the theory, does not designate a specific mechanism, but rather a class of mechanisms (p. 120).

Defenses against exhibitionism and scopophilia: To continue with the analysis of the vicissitudes of the impulses of exhibitionism and scopophilia, consideration must now be given to the pathogenic defenses against their expression. As has been pointed out here, and elsewhere (Blum, 1953; Fenichel, 1946), sublimations are characterized by a desexualization of the impulse, a complete discharge of the impulse energy, and an alteration within the ego. This is only possible when there has been no warding off of the impulse by the development of a countercahexis. Where such warding off has occurred the impulse is blocked from discharge, loses connection with the total personality, and remains unchanged in the unconscious. As a result the warded off impulse continues to exert a constant pressure toward discharge; it uses any opportunity for indirect expression, displacing its energy to any other behavior even remotely associated. Such behavior, including remote neurotic symptoms, is termed derivative (Fenichel, 1946).

Exhibitionism and scopophilia are considered to be the impulses underlying a variety of derivative behaviors that represent defensive attempts to deal with these impulses. Shame, as a motive for defense, moreover, is felt to be mainly directed against exhibitionism and scopophilia (Fenichel, 1946); either of these two impulses may serve as the specific defense against the other (Freud, 1956b).

Stekel (1957) classifies as neurotic disguises of exhibitionism such symptom-like behaviors as: morbid bashfulness, fear of blushing, sensitivity to light, and self-consciousness regarding the act of dressing or undressing.

A fear of open streets may often be a defense against exhibitionism (or scopophilia) according to Fenichel (1946), and both impulses are prominent factors in the phobias connected with appearing in public. The feared appearance may be simply being in a crowd (crowd phobia), or it may be more specifically delimited, as in a fear of being looked at (stage fright) (Fenichel, 1946). The analysts of three cases of agoraphobia in female patients (Bergler, 1954; Fenichel, 1946; London and Caprio, 1950) interpret the behavior as both a defense against exhibitionistic impulses and a disguised means of expressing them. A lesbian patient discussed by London and Caprio (1950) feared open country, deserted streets, crowded street-cars, crowded rooms, walking across a room in front of people, and personal ugliness; these were interpreted as specific defenses against exhibitionism.

Social inhibition and erythrophobia, or the morbid fear of blushing (accompanied by severe blushing on the slightest pretext), have exhibitionism as a major determinant, according to Fenichel (1946). Severely socially

inhibited individuals may resemble the paranoids in the extent of their withdrawal from all social contacts. The paranoid component, however, is not a firm belief (people are against me') but a possibility ('they might be against me'). Further, Fenichel (1946) feels that specific social inhibitions may be based on specific repressions of exhibitionism, referring to "Lady in the Dark" as illustrative. London and Caprio (1950) summarize the literature on erythrophobia, and present the major findings of the psychoanalysis of a male patient with this problem. Three inter-related elements in the man's conflict: exhibitionism, latent homosexuality, and narcissism underlay his erythrophobia, coprolalia, irritability and anger. On the basis of this case, they interpret both their findings and the prior literature concluding that blushing is a symptom and not a disease entity.

A fear of being ugly or repulsive in some other way is a fear of one's own exhibitionism, and of the possibility of being rejected or punished for exhibitionistic behavior according to Fenichel (1946). He states further, that, the fear may be of blushing, or exuding a bad odor, or, in women it may also be a fear of being physically disabled or unable to bear children.

The relationship between stuttering and ambition indicates that it is a neurotic defense against exhibitionism, according to Fenichel (1946). Stuttering only when speaking in public resembles the neuroses of erythrophobia, stage fright, and other social fears. An exhibitionistic component also underlies the pregenital conversion of tic.

The exhibitionism is directed toward gaining...reassurance, this intention may fail and end in a new...hurt. There is a definite relation between tic and children's (and actor's) play with their facial expressions (Fenichel, 1946, p. 319).

Abraham (1949) considers spasmodic twitching of the eyelid as a defense

against scopophilia. There would seem, however, to be an exhibitionistic element present as well, according to the preceding analysis of the.

Goodman (1952), Levin (1953), and Bunker (1953) all note that inhibitions of literary and artistic creativity represent specific inhibitions of exhibitionistic impulses. Schneider (1950) also describes total inhibitions in creative workers, calling this the "neurotic block and blank syndrome". This is seen as the result of conflict between the sublimated desexualized desire and infantile exhibitionistic needs. It may also result from identifications between personal sexual problems and the material being worked on. Such neurotic conflict might be found in the chaotic disorganization of some public speakers, in conversations and in some of the current literature (cf. especially the modern imitators of James Joyce and "beatnik" writings). In parallel, Abraham (1949) discusses a "brooding and doubting" syndrome as a defense against scopophilia. Here the individual is unable to make decisions and seems literally "unable to see his way clearly".

Shyness is considered to be the specific defense against scopophilia by Fenichel (1946), while blushing and the fear of blushing are the overt manifestations of this social inhibition. Moreover, repression of the scopophilic impulse may result in inhibitions of looking; the person may turn away from seeing a special class of objects (related for example to castration anxiety), or, in extreme cases he may live only in abstractions and actually be unable to look at things (Fenichel, 1946). While the neurotic brooding and doubting syndrome considered earlier would appear to be similar, this syndrome probably represents a more active defensive transformation into unproductive curiosity; certainly more active than in

an inhibition of looking.

Abraham (1949) discusses three cases of neurotic photophobia and interprets this condition as a defense against scopophilia. There was no physical basis in any of these patients for the increased sensitivity to light, and Abraham (1949) concludes that neurotic fear of blindness is an upward displacement of castration anxiety (the eye symbolizing the penis). The fear of being discovered watching parental sexual intercourse is transformed into a desire to avoid light and prevent any possibility of one's being observed by others.

Inhibitions in motility may often mean that the individual is literally paralyzed by a sight too frightening; such a sight is understood by the individual to be a portent of death or castration (Fenichel, 1946). Symbolically, petrification, according to Fenichel (1946), is a specific punishment for scopophilia and signifies the bodily feeling of immobility (motor inhibition) resulting from severe fright; this symbol is used extensively in myths, fairy tales, dreams, and neurotic symptoms. For example: Lot's wife turned to salt for looking back; "I was rooted to the spot"; and the dream experience of running through syrup reported by so many neurotics. Ferenczi (1950), however, disagrees and considers motor inhibition a defense against exhibitionistic and aggressive impulses.

Mental inhibitions may result from a combination of a sexualization of the intellectual function and a repression of sexual curiosity according to Fenichel (1946). The resultant stupidity is both defensive and potentially gratifying. Ferenczi (1950) considers visuo-spatial learning difficulties the resultant of an over-inhibition of scopophilia.

Depersonalization, as an inhibition of emotions, may express a de-

defense against intense curiosity; along with such inhibition of feelings or other internal perceptions there is a heightened self-observation according to Fenichel (1946). London and Caprio (1960) report such depersonalization in a man who was latently homosexual. There was a conflict over scopophilia, a variety of fantasies, repression of mental images in his post-coital fantasies and genital exhibitionism. This man spent much of his time searching out burlesque shows.

Hysterical disturbances of vision reveal a repressed impulse to look and to exhibit according to Freud (1956a). Ferenczi (1950) explains the hysteric's characteristically constricted visual field as being due to the more readily sexualized peripheral visual field (since this area has less significance for the ego). Fenichel (1946) states that sexualization of vision may refer to pregenital erogenous zones symbolically, and may not always be due to simple scopophilia or genital symbolism such as Abraham (1949) discusses in connection with his interpretation of neurotic photophobia. Thus conversion symptoms of vision such as micropsia and neurotic reading difficulties may be defenses against oral-incorporative and oral-sadistic conflicts rather than against scopophilia. However, he also comments that while the origin of myopia is undoubtedly somatic "it ... may sometimes be due to the attempt to incorporate objects at the bidding of scopophilic impulses" (Fenichel, 1949, p. 257). One of Abraham's (1949) cases would seem to bear this analysis out: a patient complaining of visual difficulty found objects appeared to be blurred and indistinct much of the time. This lack of visual acuity was interpreted as a defense against scopophilia. In another case the patient reported a constant flickering effect, dimming of vision, seeing zigzag lines before his eyes, and seeing as if

through a veil. This visual disturbance was also interpreted by Abraham (1949) as a means of defending against scopophilic impulses.

Beigl (1950) cites a case of myopia; this symptom was interpreted as a defense against the patient's seeing his mother, and his "own ugly face in the mirror". The symptoms of stabbing or boring pains in the eye may signify, however, a displacement of genital sensation according to Abraham (1949).

Disguised expressions of exhibitionism and scopophilia: The behaviors discussed above represent outcomes of neurotic conflict; visible evidence in behavior of the struggle between the impulse and the warding off forces. There is another class of behaviors, however, that may be considered to be simply disguised expressions of the exhibitionistic and scopophilic impulses. In this type of expression the aim and the object may be changed, but the desexualization, characteristic of a sublimation, is absent. These behaviors, then resemble direct expressions, yet there is some degree of displacement away from the original object. Disguised expressions, therefore, seems a more apt classification taking cognizance of the degree of displacement and the lack of neurotic conflict.

For example: the exhibitionistic impulse may be displaced to other parts of the body or to bodily adornment (Rickels, 1950; Stekel, 1952). Thus we may see the 'Charles Atlas' flexing his muscles on almost any beach, the Brigitte Bardot type cavorting on many a city street, and the Hedda Hopper hat everywhere. Moreover, in females the home may represent an extension of the self with the exhibitionistic impulse continually being gratified through maintaining a 'show place' (Reik, 1953). Other

overproductive distortions of behavior, such as ham acting (Schneider, 1950), and pleasure in taking the limelight or being the life of the party (Ferenczi, 1950) represent displaced exhibitionism. Schneider (1950) believes that the lack of persistence, or inability to complete tasks, maintain hobbies, or compete in sports also reflects such displacements. Lack of persistence differs from the "block and blank" syndrome discussed earlier in that the motivation is to engage in the activity as a displacement of the exhibitionistic impulse; completion of the task is not essential to impulse gratification. In the "block and blank" syndrome there is certainly no lack of motivation to complete the task, though completion is often impossible. Taking pleasure in obscenity and obscene wit, thereby shocking others, is also attributed to a displaced exhibitionistic impulse according to Ferenczi (1950).

Fenichel (1946) relates the enjoyment and gratification derived from reading pornography to both exhibitionism and scopophilia. In the former impulse the gratification is through vicarious empathy with the actors in the pornographic material; in the latter impulse the gratification is, obviously, direct though displaced to the printed page.

Just as for the exhibitionistic impulse, the scopophilic impulse may be displaced to other parts of the body. Here would be classified behaviors characterized by a compulsion to pay particular attention, for example, to the feet, head, eyes, face, or buttocks (Abraham, 1945); or almost any part of the body (Fenichel, 1946; Stekel, 1952). A compulsive scopophilia in disguised form may be typified in a case of Abraham's (1940). This patient found it necessary always to look at the backs of things he touched or passed.

Compulsive curiosity as a disguised form of scopophilia may result from the merger of orality with the scopophilic impulse. As Fenichel (1946) states:

...by displacement of the constellation 'hunger' to the mental field curiosity may become an oral trait of character, and under certain conditions assume all the voracity of the original oral impulse....Linking the ideational fields of 'looking' and 'eating' may often be due to some historically important incident such as a child having seen a younger sibling being nursed. (p. 491).

According to Abraham (1949), a further displacement of scopophilia may be found in the individual who finds it necessary to devote an inordinate amount of attention to the ordinary details of daily life. This would seem to be roughly analogous to Schneider's (1950) lack of persistence.

Hypercathexis: A special case of the direct expression of exhibitionism and scopophilia has been reserved until this point. This classification seems to the writer to represent hypercathexis of these impulses, characterized by either direct genital exposure to others or directly viewing the nude bodies or sexual activities of others. Such behavior forms a rather large proportion of sexual offenses (Karpman, 1954), yet little is known of the dynamics of the offenders. Currently there seem to be almost as many theories as there are theorists regarding the dynamic aspects of such hypercathexis (or overdetermination) of these impulses. Further, there is not even a consistent cluster of dynamic factors emerging from the large body of clinical data. For example: causality is attributed to a precipitating emotional trauma such as a broken engagement or the death of the mother in some (Karpman, 1954), or all (Rickels, 1950) cases of genital exhibitionism. On the other hand, Stekel (1952) considers that the inhibition of genital sexuality underlies the onset. Guttman (1953) stresses

biologic and endocrinologic factors interacting with psychological factors in accounting for compulsive exhibitionism; Karpman (1954) minimizes organic defects. Nickels (1950) stresses psychologic factors, including a castration complex stemming from a fear of the dominating mother; the act of exposure represents a protective mechanism against castration anxiety, as well as a rebellion against the mother. Others interpret genital display as: a passive form of voyeurism (Kinsey, 1953); London and Caprio (1952) also stress passive scopophilia; displacement of scopophilia through identification with the observer (Fenichel, 1946; Karpman, 1954); a substitute for masturbation (Karpman, 1954); or compensation for real or fancied sexual inferiority (Nickels, 1950). It should be pointed out here that genital exhibition seems to be restricted to males, and, indeed, Fenichel (1946) states that such behavior is never found in the female since they have no need for reassurance against castration. Karpman (1954) concurs with this point of view. However:

New York - (AP) - Patrons of a swank east side night spot were amazed early Saturday to note two ladies drinking at a table while barefoot - virtually up to their chins.

Customers bolted from the uptown cafe when the ladies refused to put on their clothes...The manager said he begged the ladies to put something on but that they replied merely: "Get away"....The ladies continued...to remain bare... despite policemen's efforts to cover them on the way to the stationhouse....They were convicted of disorderly conduct and sentenced to 30 days in the workhouse. (Detroit Free Press, March 30, 1958).

One wonders how many such cases go unreported, and how many others are classified as 'disorderly conduct', rather than 'indecent exposure'.

Stekel (1952) reports one case of a woman who complained of hysterical spells in which she exposed her genitalia. The analyst felt, however, that the exhibitionism was not the dominant factor in this woman's

neurosis. Fenichel (1946) explains away such cases of female exhibitionism as a form of sadistic destruction of the viewer, i.e., the sight of the "castrated" female in turn castrates the viewer. For Fenichel, and for psychoanalytic theory in toto, such an explanation is necessary in order to maintain the internal consistency of the theory.

The theoretical position regarding hypercathected scopophilia is certainly no clearer. Stekel (1952) and Karpman (1954) consider that this behavior can be found to some extent in everyone. This, of course, then does not differ from the direct expressions considered earlier. Fenichel (1946) feels that scopophilia represents a need for reassurance against castration anxiety; viewing female urination, for example, is the attempt to see a female penis. On the other hand he also states that looking as a passive act resolves conflict about following an impulse, thus avoiding the guilt and responsibility attendant upon the expression of an exhibitionistic or sadistic impulse. In this analysis, scopophilia seems to be considered a mechanism rather than a component impulse.

To further cloud the issue Schmalz (1953) states that the exhibitionist is a scopophiliac in reverse; similarly Karpman (1954) considers that the exhibitionist identifies himself with the observer, while the scopophiliac identifies with the object viewed. The writer here notes that the ideal situation for optimal total gratification for all concerned might be, then, an exhibitionist exhibiting to a scopophiliac.

Summary: The theoretical situation regarding defensive and disguised expressions of exhibitionism and scopophilia seems, then, no better than that regarding the definition of these impulses. While there

certainly seems to be no lack of clinical data, as the number of books and articles attests, there certainly seems to be a serious lack of clear concise theoretical formulations.

Interim statement of the problem: In this review of the literature the absence of experimental studies of exhibitionism and scopophilia is glaringly apparent. While various approaches, such as studies with the Blacky Test (Blum, 1950), have given empirical support to the conceptualization of the impulses represented in the psychosexual levels of development, no support has yet been offered for the existence of exhibitionism and scopophilia as components of the sexual impulse.

It would seem appropriate, as a first step in the empirical investigation of these impulses, to determine if, in fact, their behavioral expressions do exist as universally as the psychoanalytic theory of the component impulses postulates, and as universally as their widespread use as dynamic concepts would imply.

The suggestion of a possible means of approaching this problem through the operation of ego defenses is to be found in Fenichel (1947):

...every person has a certain amount of warded off instinctual energies which are kept from being discharged by defensive forces (in the ego) and which try to break through nevertheless... (p. 121),

and

...the repressed components of infantile sexuality continue to exist in the unconscious, unchanged... (p. 57).

The Experimental Method: As has been pointed out earlier, pre-genital impulses undergo many vicissitudes, once genital sexuality is

achieved. Theoretically only the ego is capable of originating overt behavior thus providing mechanisms for the sublimation, repression and expression of pregenital strivings. Such overt behavior would seem to be the only point of attack for detecting the presence of these impulses. In other words, the impulse itself is not directly observable; rather it is inferred from some change in behavior in the presence of stimulation from the environment. The problem, then, is to determine if a particular kind of behavioral sequence, amenable to observation in a controlled laboratory setting, exists; if so, would it then reflect impulse arousal and the ego mechanisms defending against such arousal and against expression.

Recent work by Blum (1954, 1953, 1957) and others (Nelson, 1955; Smock, 1956) suggests a behavioral sequence that seems appropriate and seems to fulfill the conditions set forth above. In this work an unconscious psychosexual impulse has been inferred to have been aroused; the arousal detected, it is felt by the experimenters, by measurable changes in perceptual behavior. This inference appears justifiable in the context of the following statement by Fenichel (1946):

There are defensive attitudes against painful perceptions just as there are defenses against any pain. Nevertheless ...defenses against perceptions seem to be performed first and foremost in the service of defenses against instincts (p. 124).

Within this theoretical setting Blum (1954) suggests that there are two opposing ego processes in perception. In one process the ego displays differential sensitivity to those environmental cues suggestive of unconscious impulses; it is ready, therefore, to invoke defensive measures should such impulses, or the environmental cues, approach awareness.

The second process: a shutting off, or rejection of the threatening perception (i.e., the environmental cue) occurs when the stimulus value of the cue becomes sufficiently intense as to approach awareness.

These processes have been labelled perceptual vigilance (Glum, 1954) or selective vigilance (Bruner and Postman, 1947), and perceptual defense (Postman, Bruner and McGinnes, 1948), respectively, and have been the subject of one of the most intensive series of investigations in recent years. It is our purpose here to indicate our justification for selecting these perceptual processes as the behavioral sequences which might provide, through the analysis of behavioral changes, the data for making inferences regarding the experimental arousal of exhibitionism and scopophilia. The literature on these processes is extensive; only that which is pertinent to the illustration of the processes and the demonstration of the method will be reviewed.

Perceptual vigilance: Under the heading of perceptual vigilance or sensitization, there have been a number of studies utilizing the tachistoscopic presentation of affect-laden and neutral word stimuli. These studies, generally, demonstrated a heightened awareness, in the subject, of the affect-laden stimulus, but the methodology was often confounded by variables relating to word valency, sex of experimenter, absence of conflict centered around the words chosen, and the inhibition of verbal report by the subject of the "taboo" words, among others (see, for example, Goldiamond, 1958).

Using an autonomic response (GSR) conditioned to nonsense syllables paired with shock and presented below recognition threshold,

Lazarus and McCleary (1951) found that there was an anticipatory GSR response to the shocked nonsense syllables even after shock was omitted. The authors termed this "subception" and defend it as a process of discrimination without conscious awareness.

Blum (1954) presented, tachistoscopically, four reproductions of the Blacky pictures (Blum, 1950): two distractors, one conflict-critical, and one neutral. These were arranged on cards so that each picture appeared an equal number of times in each position on the card (top, bottom, right, and left); all four pictures appeared on each card. After a baseline series of trials at speeds below awareness the conflict card was sensitized and the neutral card was neutralized by verbal instruction. Then a vigilance series of trials was presented. The subject was required, on each trial, to merely call the position that stood out the most. It was found that the position of the conflict-critical stimulus was called more frequently after sensitization, even though subjects reported no awareness of the content of the stimulus pictures. Note that this methodology avoids many of the problems noted above with this type of instrumentation.

Nelson (1955), using Blum's (1954) design, classified subjects as having high or low conflict on the psychosexual dimensions of the Blacky Test (Blum, 1954). He found that subjects using projection as a defense tended to call more often the position of the stimulus related to their own psychosexual conflicts. These results were confirmed in a similar study by Blum (1955).

Smock (1956) replicated the Blum (1954) study, confirming the findings on perceptual vigilance, though he rejects an interpretation of these findings as the defense against the emergence of repressed impulses.

It should be pointed out that Smock is somewhat in error here, since the repressed impulse is, in fact, only inferred; what is defended against by perceptual vigilance is the possibility of the arousal of a repressed impulse by environmental cues.

Summary: From the foregoing analysis it seems apparent that perceptual vigilance might well be employed as an indicator of defenses against the affects aroused by conflict-centered environmental stimuli. Thus it should lend itself well to the investigation of exhibitionistic and scopophilic impulses.

Perceptual defense: As with perceptual vigilance, the early studies were concerned with the tachistoscopic presentation of affect-laden word stimuli, and were subject to the same confounding (see, for example, Goldiamond, 1958).

Lazarus (1953) and Eriksen (1951, 1952, 1956) among others, on the other hand, demonstrated that when stimuli were anxiety-producing for a particular subject he would tend to avoid the perception of environmental cues suggestive of such stimuli. Chodorkoff (1954), using similar procedures confirmed these findings.

In the study reported previously, Blum (1954) followed the vigilance series of trials with a series at a speed of presentation closer to awareness. The subject's task, in this series, was to locate the critical card half of the time and to locate during the other half of the time the neutral card. Blum (1954) found that a significant number of subjects shifted from the earlier vigilant behavior to a significant avoidance of the conflict-critical card, selecting the neutral card more often. Blum concluded that such perceptual defense behavior provided an excellent

setting for the experimental examination of psychosexual impulses. Nelson's (1955) study, reported above, tended to confirm this conclusion, as did also other Blum studies (1955, 1957).

Smock (1956) in the study reviewed above, however, failed to obtain a significant defense effect in his replication. His results indicated that the original method did not offer sufficient control of stimulus factors when the shift in speed of exposure was effected between the vigilance and defense series. This, it was felt, cast doubt on a perceptual defense interpretation of the Blum (1954) results. Smock (1956) prefers an interpretation based on a gradient of generalization of anxiety arousal to account for perceptual defense phenomena. No data, however, is presented to support such an interpretation; the important results of the study would seem to be regarding the methodology.

Summary: From the work on perceptual defense it seems that the conditions favorable to the production of avoidant behavior are somewhat more difficult to replicate, though such replication may depend largely on introducing appropriate controls for stimulus factors at each speed of exposure. With modification, the Blum (1954) design should provide a means of detecting defenses against the perceptions of environmental cues where such cues might stimulate the arousal of exhibitionistic and scotophilic impulses.

Statement of the problem: The foregoing review of the literature relating to the concepts of exhibitionism and scotophilia as components of the psychosexual drive points up a lack of systematic experimental

studies. This paper proposes to initiate a program of systematic investigation of these concepts, utilizing the perceptual mechanisms of vigilance and defense.

Argument: If exhibitionism and scopophilia as pregenital components of sexuality do, in fact, suffer the three concurrent fates of repression, displacement and sublimation, then regardless of the extent of sublimation or gratification some portion of these impulses must have been repressed and be continuously striving for expression, and just as continuously be held in check by ego-defensive processes.

Argument: If environmental cues suggestive of the pregenital impulses of exhibitionism and scopophilia are presented in such a way as to stimulate ego-defenses, then the operation of these defenses should be reflected in changes in perceptual behavior.

From this argument four specific hypotheses may be formulated as operational definitions of exhibitionism and scopophilia:

The Vigilance Hypotheses:

Hypothesis 1. If, after an initial series of presentations at a low level of awareness, a stimulus picture depicting the act of looking is associated with verbal statements reflecting the psychosexual content of this act of looking, then, the frequency with which this stimulus picture is chosen as standing out the most clearly should increase in a subsequent series of presentations at the same level of awareness.

Hypothesis 2. If, after an initial series of presentations at a low level of awareness, a stimulus picture depicting the act of exhibiting is associated with verbal statements reflecting the psychosexual content

of this act of exhibiting, then, the frequency with which this stimulus picture is chosen as standing out the most clearly should increase in a subsequent series of presentations at the same level of awareness.

The Defense Hypotheses:

Hypothesis 3. If, after an initial series of presentations at a high level of awareness, a stimulus picture depicting the act of looking is associated with verbal statements reflecting the psychosexual content of this act of looking, then, the frequency with which this stimulus picture is chosen as standing out the most clearly should decrease in a subsequent series of presentations at the same level of awareness.

Hypothesis 4. If, after an initial series of presentations at a high level of awareness, a stimulus picture depicting the act of exhibiting is associated with verbal statements reflecting the psychosexual content of this act of exhibiting, then, the frequency with which this stimulus picture is chosen as standing out the most clearly should decrease in a subsequent series of presentations at the same level of awareness.

It is to the investigation of these hypotheses that the present study is directed.

METHOD

The procedure employed to test the stated hypotheses was adapted from that developed by Blum (1954). Modifications, as indicated below, were necessary to insure that control over stimulus factors was consistent in both the vigilance and defense parts of the experiment.

Apparatus: The apparatus employed was a mirror tachistoscope, designed by R. Gerbrands of Arlington, Massachusetts for use with individual subjects. The stimuli were presented at one of two speeds of exposure, depending on the experimental group to which the subject belonged. For one group (vigilance) the stimuli were presented at an exposure speed of .03 seconds, found by Blum (1954) and others (Nelson, 1955; Smock, 1956) to represent a low level of awareness; for the other group (defense) the stimuli were presented at a speed of .20 seconds, found to represent a higher level of awareness. Illumination of the adapting and viewing fields were adjusted to initial illuminances of .58 foot lamberts and .73 foot lamberts respectively, after Nelson (1955). These illuminances were chosen to permit some adaptation to a less bright surface between exposures in order to insure that the individual's perception of the test field was not contaminated by the physiologically based dark adaptation phenomenon. The illuminances of the fields were checked twice during the experiment to assure constancy for all subjects; no change from the initial to the terminal readings was detected.¹

1. Initial and terminal measurements were made by Professor S. H. Bartley, who is experienced in the use of the MacBeth Illuminometer.

The stimulus materials were redrawn¹ from the Blacky Pictures Test (Blum, 1950), as follows (see Appendix 1.):

- Exhibitionism (E):** Based on card IV (Oedipal intensity), with the following alterations: changing Blacky's expression to that on the frontispiece (a presumably neutral one), reversing the positions of the figures on the card (i.e., mirror image), removing the 'hearts', putting Mama and Papa's paws on the ground, turning their heads to look at Blacky, and removing the bush in the foreground.
- Scotophilia (S):** Based on card IV (Oedipal intensity), with the following alterations: changing Blacky's expression to that on the frontispiece as above, removing the 'hearts', and removing the bush in the foreground.
- Neutral (N-1):** Card X (Ego-ideal - love object) with Blacky reduced in size and the dream figure drawn in outline.
- Neutral (N-2):** Card XI (Ego-ideal - love object) with Blacky reduced in size, the dream figure drawn in outline and the entire card reversed (i.e., printed in mirror image).

The four pictures were printed on white, glossy photographic paper in order to obtain the sharpest images possible; the gloss then was reduced by an application of "matte" spray lacquer. All four pictures were mounted on a series of eight, dull white poster boards (8 1/2 x 11"), so that the position of each picture relative to the positions of the other pictures on the cards was systematically varied from card to card. Table 1. summarizes this pattern of rotation of the pictures.

1. The original drawings of the stimulus pictures were made by Miss Donna Diamond, Instructor in Art at Michigan State University and a professional artist.

TABLE 1.

PATTERN OF ROTATION OF THE FOUR STIMULUS PICTURES

Card	Top	Bottom	Right	Left
1.	E	N-1	S	N-2
2.	N-1	S	N-2	E
3.	S	N-2	E	N-1
4.	N-2	E	N-1	S
5.	S	N-1	N-2	E
6.	N-1	N-2	E	S
7.	N-2	E	S	N-1
8.	E	S	N-1	N-2

Subjects: The subjects were undergraduate students solicited from the introductory course in psychology. Male subjects only were used since, according to both theory (Fenichel, 1946) and clinical observation (Karpman, 1954; Kinsey, et al., 1953), sex differences are hypothesized to exist in the functioning of the impulses under observation. Only volunteers who were between 18 and 22 years of age, unmarried, and with 20/20 vision in both eyes were used. Vision of each subject was checked by means of a Snellen chart. The restriction on vision seemed warranted since visual disturbances are felt to be one of the defenses against scopophilia (Abraham, 1949; Beigl, 1950; Fenichel, 1946; Freud, 1955); such defenses, if present, might well contaminate the data obtained from the visual perceptual mechanisms. The restriction on marital status was imposed since the marital relationship affords ample opportunity for viewing and display (Kinsey, 1953).

Experimental Design: Forty subjects were divided randomly into four groups; randomization was accomplished by assigning each succeeding subject into a different group. Two groups were used to test the Vigilance (V) hypotheses, and two to test the Defense (D) hypotheses. All trials for the V groups were given at .03 sec.; all trials for the D groups were given at .20 sec.

The design involves an initial set (set 1.) of 32 trials as a baseline, followed by showing the subject one of the stimulus cards used in the tachistoscope for 30 sec. A second set of 32 trials (set 2.) was then given to determine whether any measurable change resulted from the exposure of the stimuli to the subject. This aspect of the procedure was designed to detect whether, as a result of interpretation by the subject of the content

area of the stimulus, a measurable change in response tendency occurred.

Following set 2, instructions, designed to arouse either the exhibitionistic or the scopophilic impulses, were given to the subject; at the same time he was given a 6" x 9" photographic enlargement, mounted on poster board, of the appropriate stimulus picture to study. A final set of 32 trials (set 3) was then given.

The design of the study is summarized in Table 2.

Properties of the stimulus: It might be pointed out here that the results of set 1 were designed to be used as a check on the possibility that the physical properties of a given stimulus picture or pictures, from among the set of four, might exert a differential "pull" in terms of the response tendency. Smock (1956) attributed such a problem to the discrepancies he found in his replication of the Flum (1954) study. If a differential pull had been present in one, or any, of the stimulus pictures they would have had to have been modified before continuing.

In Table 3 are set forth the analysis of the data for the first set of 32 trials for the four groups: vigilance scopophilia (VS), vigilance exhibitionism (VE), defense scopophilia (DS), and defense exhibitionism (DE), as well as for four control groups added after the main experiment had been completed and for all V groups combined and all D groups combined. As the table indicates, there were no significant differences in frequency of choice of the various stimulus pictures found in any of the four main groups: VS, VE, DS, and DE. When groups were combined the results were similar. Two of the four control groups showed significant differences in frequency of choice; however, as the table indicates, this difference

TABLE 2.

EXPERIMENTAL CONDITIONS

Group	Set 1	Set 2	Stimulus Sensitized	Set 3
Vigilance				
1.	.03	.03	E	.03
2.	.03	.03	S	.03
Defense				
3.	.20	.20	E	.20
4.	.20	.20	S	.20

TABLE 3.

ANALYSIS OF THE FIRST SET OF 32 TRIALS OF EACH GROUP
AND FOR GROUPS TESTED UNDER SIMILAR CONDITIONS COMBINED

Group	Stimulus Picture				N-1	N-2	χ^2	p ³ .		
	S	R	SM	EM						
<u>Vigilance</u>										
S	7.5	25.0	3.1	27.0	7.9	21.0	8.5	27.0	1.44	.800>p>.754
R	7.8	24.0	7.7	21.0	7.2	22.0	9.3	33.0	5.40	p = .158
SM	7.9	24.5	7.1	21.5	8.9	28.5	8.1	25.5	1.50	p = .754
EM	7.7	25.5	7.6	24.0	8.9	28.5	7.8	22.0	1.35	.800>p>.754
CS	8.2	27.5	7.4	21.0	9.6	33.0	6.8	18.5	7.71	.052>p>.036 *
Combined	7.8	126.5	7.6	114.5	8.5	133.0	8.1	126.0	2.14	.649>p>.524
<u>Defense</u>										
S	7.3	19.5	9.7	30.5	8.7	30.0	6.3	20.0	6.63	.077>p>.068
R	7.6	23.5	8.2	26.0	7.5	23.5	8.7	27.0	0.57	.992>p>.928
CS	8.4	28.0	7.1	21.0	9.6	32.5	6.9	18.5	7.71	.054>p>.052
Combined	7.8	71.0	8.3	77.5	8.6	86.0	7.3	65.5	4.67	.242>p>.200

Notes: 1. Means are presented for comparison purposes only.

2. Chi square for ranks; the statistic of the Friedman two-way analysis of variance by ranks.

3. Probabilities associated with a two-tailed test of significance.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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arose from a difference between the two neutral pictures; these pictures serve only as distractors and are not crucial in the determination of the main effects of E and S. The statistic used to test for differences was χ^2 ; the Freedman two-way analysis of variance by ranks for related samples. This statistic was chosen since it makes no assumptions regarding the distribution of sample scores, and provides for a test between related samples (Siegel, 1956). On the basis of the foregoing analysis of the set 1 data continuation of the study using these particular stimuli was felt to be warranted.

The results of set 2, when compared with those of set 1, were used to check on the psychological properties of the stimulus before any interpretation of a to-be-sensitized stimulus was offered to the subject by the experimenter. In other words, if the subjects react to some psychological content inherent in the stimulus then either the data of set 2 would be used as a baseline, or the "offending" stimulus would have to be modified. This is a built-in check on whether the subject "guesses" the content of a stimulus and reacts to it, even though the stimuli were designed to appear innocuous.

Table 4 sets forth the comparison between the first and second sets of trials. The four main groups (VS, VE, DS, DE) show little change from one set to the other; the Wilcoxon ranking test for matched pairs of signed ranks (Siegel, 1956) confirms the absence of significance. Of the four control groups, one (CS-D) shows a significant change in the direction of more frequent choice in set 2. This change is significant beyond the 5% level for a two-tailed test. Accordingly, for this group the baseline established to test the effects of sensitization was changed to be set 2.

TABLE 4.

COMPARISON OF THE FIRST SET OF 32 TRIALS WITH THE SECOND SET OF 32 TRIALS FOR EACH EXPERIMENTAL GROUP FOR THE STIMULUS PICTURE TO-BE-SENSITIZED

Group	\bar{x} Set 1 ¹	\bar{x} Set 2	T ²	d.f. ³	p ⁴
<u>Vigilance</u>					
S	8.1	7.6	13.5	9	>.05
E	7.8	7.6	16.0	9	>.05
SM	7.1	7.6	8.5	7	>.05
EM	7.7	7.1	9.5	8	>.05
CS	7.4	7.8	13.0	8	>.05
<u>Defense</u>					
S	9.7	9.1	12.5	8	>.05
E	7.6	7.4	14.0	8	>.05
CS	7.1	8.6	6.5	10	.05 > p > .02 *

Notes

1. Means presented for comparison purposes only.
2. T: the statistic of the Wilcoxon matched-pairs, signed-ranks test.
3. Degrees of freedom exclude difference scores of zero.
4. Probabilities associated with a two-tailed test of significance.

Modification of the stimulus pictures was not felt to be necessary on this basis, however.

On the basis of these findings continuation of the study with the present stimuli was felt to be justifiable.

Procedure: The specific procedure for all subjects was as follows.

The tachistoscope was explained to the subject, after which he was given the following instructions:

I want you to look into the eyepiece and focus on the black dot you will see in the center of the field. When we begin a series of trials I want you to continue to fixate on the dot at all times. Do not move away from the eyepiece until you are told to do so. I am going to flash some pictures very quickly at a fraction of a second. There will be four pictures shown simultaneously at each flash - one at the Left, Right, Top and Bottom. What I want you to do is simply to say which one of the four stands out the most. Obviously with the very fast speeds we are going to use you probably won't be able to get any real idea of what the pictures are, so you may feel quite uncertain of your judgements. But in every case make a guess. All I am interested in is your immediate impression. You will see different patterns or combinations of pictures during the series of flashes. Remember to say just Left, Right, Top or Bottom, according to which picture appears to you to stand out the most. When I say Ready, focus on the dark spot in the center of the screen. That will give you the best chance to see all four pictures at once. I will flash the pictures right after the ready signal.¹

The first set of 32 trials was then begun.

Before each set of trials the subject was allowed 45 sec. to adapt to the illuminance of the adaptation field. A 30 sec. rest was given after each block of 16 trials.

After the first set of trials the subject was handed one of the stimulus

1. Adapted from Blum (1954).

cards, randomly selected from those being presented in the tachistoscope.

He was told:

"Here is one of the cards you have been looking at."

After 30 sec. the card was withdrawn and the subject was told:

"We will now repeat the same process. Remember to keep your eye focussed on the black dot. Ready?"

After this set of 32 trials the instructions, designed to sensitize one of the stimulus cards, were handed to the subject to read silently. The instructions were typed on 8 1/2" x 11" white paper and enclosed in a plastic envelope. At the same time the subject was handed the large print, mentioned earlier, of the stimulus being sensitized. The instructions were given in this manner to minimize experimenter-subject interaction during this crucial phase of the experiment (after Smock, 1956).

The instructions related to the exhibitionism stimulus were as follows:

You are holding one of the pictures from among the several which you just saw at fast speeds. It belongs to a psychological test which consists of a series of cartoons portraying the adventures of a dog named Blacky. In this picture Blacky is showing off in front of Mama and Papa. Blacky really enjoys showing himself off like that to Mama, especially because he knows that Mama appreciates his doing so.

Now, without saying anything out loud, look at the picture and try to recall when you might have felt the way Blacky does here. Just think to yourself about similar experiences of your own. I will not ask you afterwards about your thoughts.¹

The instructions related to the scopophilia stimulus were as follows:

You are holding one of the pictures from among the several

1. Adapted from Blum (1954).

which you just saw at fast speeds. It belongs to a psychological test which consists of a series of cartoons portraying the adventures of a dog named Blacky. In this picture Blacky gets a lot of fun watching Mama and Papa making love, even though he knows it is not nice.

Now, without saying anything out loud, look at the picture and try to recall when you might have felt the way Blacky does here. Just think to yourself about similar experiences of your own. I will not ask you afterwards about your thoughts.¹

The subject was given two minutes to read the sensitization instructions and meditate upon them. Presumably the time was spent in the latter activity.

The next phase of the procedure consisted of another set of 32 trials. The instructions to the subject were given orally, as follows:

We will now begin a new series of trials. Remember to say just Left, Right, Top or Bottom, according to which picture appears to you to stand out the most. When I say "Ready", focus on the dark spot in the center of the screen. That will give you the best chance to see all four pictures at once. I will flash the pictures right after the ready signal.

Intertrial intervals were approximately 5 sec., or, only so long as was necessary to change stimulus cards in the tachistoscope.

The data yielded by the foregoing procedure was the frequency, set by set, of position (stimulus) choice. See Appendix 2.

1. Adapted from Blum (1954).

RESULTS

The findings, previously reported, relating to the properties of the stimulus now permit the evaluation of the experimental findings. The data analysis will be presented in the order of the hypotheses stated earlier.

The statistical test utilized in this analysis of the data was the Wilcoxon matched-pairs, signed ranks test (Siegel, 1956). This test was chosen because it considers both the direction and the magnitude of the differences in samples where each subject serves as his own control, without requiring that the data meet the assumptions of the t test. In other words, this test merely requires ordered metric scaling, and makes no assumptions about continuity of measurement or normality of the distribution of scores in the population. The data of this study make such assumptions difficult to defend.

The Vigilance Hypotheses:

Hypothesis 1. If, after an initial series of presentations at a low level of awareness, a stimulus picture depicting the act of looking is associated with verbal statements reflecting the psychosexual content of this act of looking, then, the frequency with which this stimulus picture is chosen as standing out most clearly should increase in a subsequent series of presentations at the same level of awareness.

On line 1 of Table 5 is presented the analysis of the data relative to this hypothesis. As is indicated, there is a significant shift in the direction of more frequent recognition of the critical stimulus in set 3, when compared with set 1 ($.025 > p > .01$). That is, for the scopophilia stimulus,

after sensitization it is seen more frequently than it was before sensitization. It can be concluded that, for the sample studied, hypothesis 1 is confirmed.

Hypothesis 2. If, after an initial series of presentations at a low level of awareness, a stimulus picture depicting the act of exhibiting is associated with verbal statements reflecting the psychosexual content of this act of exhibiting, then, the frequency with which this stimulus picture is chosen as standing out most clearly should increase in a subsequent series of presentations at the same level of awareness.

On line 2 of Table 5 is presented the analysis of the data relevant to this hypothesis. As is indicated, there is a shift in the direction of more frequent recognition of the critical stimulus in set 3 compared with the frequency of recognition of this stimulus in set 1 ($p < .005$). That is, the exhibitionism stimulus under these conditions is seen more frequently after sensitization than before sensitization. It can be concluded that, for the sample studied, hypothesis 2 is confirmed.

The Defense Hypotheses:

Hypothesis 3: If, after an initial series of presentations at a high level of awareness, a stimulus picture depicting the act of looking is associated with verbal statements reflecting the psychosexual content of this act of looking, then, the frequency with which this stimulus picture is chosen as standing out most clearly should decrease in a subsequent series of presentations at the same level of awareness.

On line 6 of Table 5 is presented the analysis of the data relative to this hypothesis. As is indicated, there is a significant shift in the direction of less frequent choice of the critical stimulus in set 3 when com-

pared with the frequency of choice of this stimulus in set 1 ($p < .005$). That is, the scoptophilia stimulus is seen less frequently after sensitization than it was before sensitization. It can be concluded that, for the sample studied, hypothesis 3 is confirmed.

Hypothesis 4. If, after an initial series of presentations at a high level of awareness, a stimulus picture depicting the act of exhibiting is associated with verbal statements reflecting the psychosexual content of this act of exhibiting, then, the frequency with which this stimulus picture is chosen as standing out most clearly should decrease in a subsequent series of presentations at the same level of awareness.

On line 7 of Table 5 is presented the analysis of the data relative to this hypothesis. As is indicated, there is a significant shift in the direction of less frequent choice of this stimulus in set 3 when compared with the frequency of choice of this stimulus in set 1 ($p < .005$). That is, the exhibitionism stimulus under these conditions is seen less frequently after sensitization than it was before sensitization. It can be concluded that, for the sample studied, hypothesis 4 is confirmed.

At this point evaluation of the methodology was attempted in order to identify, if possible, the specific factors responsible for the positive results. The first, and most obvious step was to omit the sensitization instructions for at least one of the stimuli under each condition of exposure. If the same perceptual response processes could be produced without the sensitization instructions the data might very readily be explained without reference to perceptual vigilance and defense. Under the condition of a low level of awareness familiarity with the critical stimulus, and, under the condition of a high level of awareness, satiation with the critical stimu-

TABLE 5.
COMPARISON BETWEEN THE BASELINE AND
THE POST-SENSITIZATION SERIES OF TRIALS

<u>Group</u>	<u>Baseline Mean^{1.}</u>	<u>Post Sensitization Mean</u>	<u>T^{2.}</u>	<u>d. f.^{3.}</u>	<u>p</u>
<u>Vigilance</u>					
S	8.1	11.7	6.5	10	.025 > p > .01 ^{4.} ∞
E	7.8	10.9	0.0	9	< .005 ^{4.} ∞
SM	7.1	11.7	0.0	10	< .01 ^{5.} ∞
EM	7.7	10.8	1.8	9	< .01 ^{5.} ∞
CS	7.4	6.9	12.5	9	> .05 ^{5.}
<u>Defense</u>					
S	9.7	4.9	0.0	10	< .005 ^{4.} ∞
E	7.6	3.3	0.0	9	< .005 ^{4.} ∞
CS	8.6	8.5	12.0	8	> .05 ^{5.}

Notes:

1. Means are presented for comparison purposes, only.
2. T: the statistic in the Wilcoxon matched-pairs, signed-ranks test.
3. Degrees of freedom exclude difference scores of zero.
4. Probability associated with a one-tailed test (differences predicted).
5. Probability associated with a two-tailed test (differences not predicted).

lus (since this is the stimulus exposed to the subject between sets 2 and 3) could well account for the positive results obtained earlier. Both familiarity and satiation, as response processes underlying perceptual behavior, have been thoroughly explored (see, for example, Osgood, 1953), and would offer a more parsimonious explanation than that suggested by psychoanalytic theory.

Twenty additional subjects were randomly assigned to either the vigilance or the defense condition, using the scotophilia stimulus. The only modification of the design was the omission of the written sensitization instructions; the subject was handed the enlargement of the critical picture with the request that he "study it carefully".

The data from the first set of 32 trials was analyzed to determine if a response preference was present. As can be seen from Table 3 subjects in both the Vigilance CS (scotophilia control) and Defense CS groups tended to choose the N-1 stimulus more frequently and the N-2 stimulus less frequently. The differences among the stimuli is significant ($.05 > p > .03$). When the data of the second set of 32 trials was compared with that of the first 32 trials (Table 4) no significant change was noted for the vigilance group ($p > .05$), though the defense group did show a significant shift ($.05 > p > .02$) toward a more frequent selection of the stimulus-to-be-sensitized. This significant change occurring between sets for the defense group required the data of the second set to be used as the baseline in testing the data of set 3. Of course, from the standpoint of maximizing differences this is an advantage, since any potential effect would be magnified when compared with the more frequent choice of set 2 (because the defense effect predicts a less frequent choice).

As can be seen from Table 5, no defense (avoidance-satiation) effect was apparent; the change amounted to .1 mean choices of the critical stimulus less than in set 2 ($p > .05$). For the vigilance group a change in direction opposite from that expected occurred, i.e., a shift away from the critical stimulus, though this was not significant ($p > .05$)¹. At this point the conclusion may safely be drawn that some factor in the sensitization instructions was apparently responsible for the significant vigilance and defense effects noted earlier.

Since the effect seemed to be a function of the sensitization instructions these were re-evaluated. On closer examination there appeared to be two possibilities that might have been contaminating factors: in the scopophilia instructions the statement "...even though he knows it is not nice..." seemed to carry an implication of moral condemnation; in the exhibitionism instructions the statement "...especially because he knows that Mama appreciates his doing so..." seemed to carry an implication of a motive for approval. This raised the question as to whether or not the significant vigilance and defense effects produced earlier were the result of these factors rather than the operating of the impulses of exhibitionism and scopophilia. Accordingly 20 additional subjects were solicited and divided randomly into vigilance E and vigilance S groups. The decision to use the vigilance technique was based on the observation that significant defense effects were produced following the test set of vigilance trials (see below and Table 7).

1. A two tailed test was employed here since the direction of the differences was not predicted in advance.

The procedure used with the original sample was employed with the sensitization instructions modified by the omission of the questionable phrases discussed above. Then, following the last, or test set of 32 trials the following additional procedure was introduced. Each subject was handed the critical stimulus picture and told to: "Study this picture again and try to recall to yourself what you were thinking of when you looked at it before." After the subject had viewed the picture for approximately one minute, presumably thinking, another set of 32 trials was given with the speed of exposure changed to .20 sec.

As Tables 3 and 4 indicate, there were no significant tendencies to choose any particular stimulus in either of the pre-sensitization sets of trials.

Table 5 reports the comparisons between the first set of 32 trials and the post-sensitization set (groups SM and EM). The vigilance effect is again quite clear ($p < .01$)¹ for both groups thus apparently ruling out the question of any perceived moral threat or approval motive implied in the sensitization instructions being responsible for the significant effects produced earlier.

A further comparison of the foregoing results was attempted and is presented in Table 6. Each group was tested against the appropriate control group. As expected, there were highly significant differences between the control group and the experimental and modified groups, and non-significant differences between the experimental and modified groups. The

1. See footnote, pg. 41.

TABLE 6.

COMPARISON BETWEEN THE EXPERIMENTAL AND CONTROL GROUPS
FOR THE BASELINE AND POST-SENSITIZATION SETS OF TRIALS

Groups		Baseline Set			Post-sensitization Set		
		\bar{x}^1	U ²	p ³	\bar{x}	U	p
Vigilance	S	8.1	39.0	>.10	11.7	17.5	.00 <p>>.001⁴.</p>
Vigilance	CS	7.4			6.9		
Defense	S	9.7	20.0	.05 <p>>p>.02</p>	4.9	19.0	.01 ⁴ .
Defense	CS	9.1			8.5		
Vigilance	S	8.1	30.0	>.10	11.7	42.0	>.10 ³ .
Vigilance	SM	7.1			11.7		
Vigilance	E	7.8	47.0	>.10	10.9	48.5	>.10 ³ .
Vigilance	EM	7.7			10.3		
Vigilance	SM	7.1	44.0	>.10	11.7	1.5	<.002 ³ .
Vigilance	CS	7.4			6.9		

Notes:

1. Means presented for comparison purposes only.
2. U: the statistic in the Mann-Whitney test.
3. Probability associated with a two-tailed test (differences not predicted).
4. Probability associated with a one-tailed test (differences predicted).

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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conclusion may be drawn from these results that the sensitization instructions are instrumental in producing vigilance and defense effects.

Since the defense effect produced by this methodology has been challenged (Smock, 1956) one further analysis was attempted with data obtained on the defense effect following vigilance. Since no baseline series at .20 sec. was available for the vigilance subjects (who were tested at .03 sec. throughout), the data of the first set of 32 trials for all defense groups was combined to approximate the most stable baseline obtainable. Vigilance groups sensitized to E were thus compared with the combined set 1 E data from the defense groups and the vigilance groups sensitized to S were compared with the combined set 1 S data from the defense groups. The instructions and procedure were as noted earlier.

As can be seen in Table 7, all groups sensitized to a particular stimulus (E or S) tended to perceive this stimulus significantly less often under conditions of relatively more exposure even though they had, just previously, tended to perceive the same stimulus more often. For the one control group no significant change in perceptual behavior was noted. These results tend to support those reported by Blum (1954) who found a defense effect following vigilance and contrast with the findings of Smock (1956) who failed to replicate Blum's (1954) study. The findings also lend support to the confirmation of the hypotheses under consideration in the present study. The stimulation provided by the sensitization instructions was apparently sufficiently strong as to produce, in the same subject, both the approach and avoidance behavior represented by vigilance and defense.

TABLE 7.

COMPARISON BETWEEN THE DEFENSE SERIES OF THE VIGILANCE
GROUPS AND THE BASELINE OF THE COMBINED DEFENSE GROUPS

<u>Groups</u>	<u>Means^{1.}</u>	<u>U^{2.}</u>	<u>p^{3.}</u>
Combined Defense - S	8.3		
Vigilance S	5.9	67.0	.10 > p > .05
Vigilance SM	5.9	48.5	.05 > p > .02
Vigilance CS	8.2	75.0	> .10
Combined Defense - E	7.8		
Vigilance E	5.5	40.0	.02 > p > .002
Vigilance EM	6.5	53.0	.05 > p > .02

Notes:

1. Means presented for comparison purposes only.
2. U: the statistic in the Mann-Whitney test.
3. Probabilities associated with a two tailed test.

DISCUSSION

The results reported in the preceding section clearly support both the vigilance and defense hypotheses. This finding is in accord with the expectations of Smock (1954) for a modified design, and the results tend, also, to support the position taken by Blum (1954) noted earlier.

The results of this study might be offered, also, in support of an operational definition of the concepts of exhibitionism and scopophilia. In this manner, exhibitionism is defined as the act of presenting to the view of others ones own body; scopophilia is defined as the act of covertly viewing others in the act of making love. Both behaviors are, for the principal actor, subject to social disapproval and when they are suggested in a social setting, they are anxiety producing and are subsequently reacted to by defenses operating through the perceptual mechanisms. Here perceptual vigilance as a defense follows the formulations of Carpenter et al. (1956) and Clausman (1959). Precedent for such a strictly methodologically based operational definition is found in the presentation of operationalism by Bridgman (1945).

Unfortunately, such a definition does not yet allow for the use of these concepts in the manner in which they previously have been employed. Ellis (1956), in an attempt to formulate operationally certain psychoanalytic principles, states:

...psychoanalytic principles should be stated in terms so that they are, in some final analysis, in principle confirmable in terms of some ultimate observables (p.137).

Such statements of psychoanalytic principles Ellis (1956) feels should avoid the use of the hypothetical construct and the higher-order

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abstraction, and remain, instead, on the intervening variable level of theorizing. Since the present study seems to offer some confirmation of an intervening variable interpretation of exhibitionism and scopophilia in terms of observables, a broader operational definition will be attempted, together with some indications as to how the problems of additional confirmation may be approached.

It is necessary, first, to define some basic principles; those presented by Ellis (1956) will be utilized. The two observables, to which all other principles are anchored, are perception and response. As Ellis states, these

...would appear to be basic, unarguable characteristics of living organisms because, first, they are intrinsic to the definition of life (an organism that in some way did not perceive and respond could hardly be called living); and, second, perceiving and responding to stimuli can be as directly observed as almost anything else in this world (p. 137).

To these are tied states of consciousness, thinking and learning, and evaluating, emoting and desiring. Of the latter, the most important evaluation for our purposes is defined as follows:

[an individual] . . . needs (has a drive toward) something when he strongly evaluates it in a positive manner - perceives it as being vitally important or necessary to him (Ellis, 1956, p. 139).

Two additional operational definitions of psychoanalytic principles are necessary before attempting to formulate operational definitions of exhibitionism and scopophilia. Ellis (1956) defines the sexual life:

Since the word "sexual" normally connotes "genital" in our culture, it is . . . best to use it as a synonym for "genital" and to use another word, "sensual" to describe the function of obtaining pleasures from all zones of the body, genital and non-genital. Sensual life, especially that comprising oral and anal sensations, begins soon after an infant's birth. Sexual or genital activity also to some degree begins in infancy (p. 142).

and sexual excitation:

...stems from (a) our biological drives, which appear to be hormonally activated; and (b) our social learning or conditioning. Sexual impulses seem to be closely related to, and in part compounded of, sensual excitations - e.g., oral, anal, urethral, and other tactile sensations. In some instances, human beings never clearly differentiate their sexual or genital sensations from some of their sensual sensations; or they become sexually fixated on an oral, anal, or urethral level because, originally, there was a close association between their genital and oral, anal, or urethral sensations (p. 147).

Operational formulation of exhibitionism: When, in the course of the development of the sensual life, sexual excitation or gratification is obtained concurrently with the display of the genitals to another, or is initiated by a display of the genitals to another such display will become a part of the sensual life. If these events are repeated, such display may take on the status of a need and this need may have important influences on adult sex and other behavior.

Operational formulation of scopophilia: The development of the sensual life is, in part, dependent on learning to discriminate between the sexes and between the genitals of the adult and the child. The sense of sight is vitally important in learning to make such discriminations. If in the process of such learning sexual excitation or gratification occurs concurrently with visual stimulation such stimulation may become part of the sensual life. If these events are repeated, visual stimulation may take on the status of a need, and this need may have important influences on adult sex and other behavior.

These formulations should permit the derivation of all of the forms of expression previously indicated: direct, displaced, sublimated, disguised and hypercathected. However, each of these modes of expression

must also be operationally formulated if theoretical consistency is to be maintained.

As was indicated earlier, this study tends to confirm parts of these hypotheses. Further confirmation, however, must be sought in a systematic program of research. Some of the stages in such a program have been planned, and may now be stated:

1. Cross validation of the results of the present study by sensitizing an unrelated picture using the same verbal instructions as were employed in this study.
2. Cross validation of the results of this study by determining psychosexual conflict scores and typical defense patterns (Goldstein, 1952) from the Blacky Pictures Test (Blum, 1950) and attempting to determine if there is a relationship between psychosexual conflict, pattern of defense, and the phenomena of perceptual vigilance and defense stimulated by exhibitionistic or scopophilic stimuli.
3. The development of a scale of exhibitionism and scopophilia; validating this scale on known groups of direct expressors (nudists), sublimated exhibitionists (actors) and sublimated scopophiliacs (possibly philosophers or gynecologists).
4. Cross validation of the scale using extreme scorers in a replication of the vigilance and defense experiments.
5. Determination of the efficiency of the scale in predicting the hypercathexis of exhibitionism and scopophilia manifested by individuals convicted of "indecent exposure" and "window-peeping".

Stages 1 and 2, of course, are primarily designed to yield validation of the present study; with stage 3 new operational formulations become necessary. At that time, however, if the results of this study are confirmed, such formulations, as hypotheses, might be stated in a manner more consistent with that proposed by Ellis (1956) and noted above.

The writer feels that only by utilizing such principles of scientific methodology as outlined here can the concepts of exhibitionism and

sceptophilia become useful in the understanding and prediction of behavior from a psychodynamic point of view.

SUMMARY

This study was undertaken as an initial stage in an empirical investigation of the psychoanalytic concepts of the psychosexual impulses of exhibitionism and scopophilia. A modification of Blum's (1954) design for producing perceptual vigilance and defense was employed to test the hypotheses that the presence, in the environment, of cues suggestive of the impulses of exhibitionism and scopophilia would arouse vigilant and defensive behavior depending on the level of awareness at which the cues were presented.

The results clearly confirm the hypotheses. Additional data was collected in an attempt to isolate the specific stimulus factors involved. The crucial factors were seen to be the verbal statements used to sensitize the subject to the visually presented cues.

The results were interpreted as lending support to a preliminary operational definition of exhibitionism and scopophilia. A more complete definition was offered as the foundation for a program of future research on these concepts.

REFERENCES

- Abraham, K. Selected papers of Karl Abraham. London: Hogarth Press, 1949.
- Beigl, H. C. The revival of hypnotism. Complex, 1950, #2, 28-36.
- Bergler, E. On acting and stage fright. Psychiat. Quart. Supp., 1949, 23, 313-319.
- Bergler, E. Post-analytic misuse of pre-analytic symptoms. Psychoanal. Rev., 1954, 41, 191-196.
- Blum, G. S. The Blacky Pictures: A technique for the exploration of personality dynamics. New York: Psychological Corp., 1950.
- Blum, G. S. Psychoanalytic theories of personality. New York: McGraw Hill, 1953.
- Blum, G. S. An experimental reunion of psychoanalytic theory with perceptual vigilance and defense. J. abnorm. soc. Psychol., 1954, 49, 94-98.
- Blum, G. S. Perceptual defense revisited. J. abnorm. soc. Psychol., 1955, 51, 24-29.
- Blum, G. S. An investigation of perceptual defense in Italy. Psychol. Rep., 1957, 3, 169-175.
- Bridgman, P. W. Some general principles of operational analysis. Psychol. Rev., 1945, 52, 246-249.
- Bruner, J. S., and Postman, L. Tension and tension release as organizing factors in perception. J. Pers., 1947, 15, 300-308.
- Bunker, H. O. A dream of an inhibited writer. Psychoanal. Quart., 1953, 22, 519-524.

- Carpenter, B., Wiener, M., and Carpenter, Janeth T. Predictability of perceptual defense behavior. J. abnorm. soc. Psychol., 1956, 52, 380-383.
- Chodorkoff, B. Self-perception, perceptual defense, and adjustment. J. abnorm. soc. Psychol., 1954, 49, 508-512.
- Clausman, R. A study of perceptual defense as avoidance and vigilance behavior. Ph.D. Dissertation, in progress. Michigan State University, 1959.
- Ehrenzweig, A. Unconscious form creation in art. Parts III and IV. Brit. J. Med. Psychol., 1949, 22, 83-109.
- Ellis, A. An operational reformulation of some of the basic principles of psychoanalysis. in: H. Feigl and M. Scriven (eds.), Minnesota studies in the philosophy of science. Vol. I. The foundations of science and the concepts of psychology and psychoanalysis. Minneapolis: Univ. of Minn. Press, 1956, 131-154.
- Eriksen, C. W. Perceptual defense as a function of unacceptable needs. J. abnorm. soc. Psychol., 1951, 46, 557-564.
- Eriksen, C. W. Defense against ego threat in memory and perception. J. abnorm. soc. Psychol., 1952, 47, 230-285.
- Eriksen, C. W. An experimental analysis of subception. Amer. J. Psychol., 1956, 69, 625-634.
- Fenichel, O. The psychoanalytic theory of neurosis. New York: Norton, 1946.
- Ferenczi, S. Sex in psychoanalysis, the selected papers of Sandor Ferenczi, Vol. I., New York: Basic Books, 1950.
- Flugel, J. C. The psychology of nudism. Complex, 1950, #3, 3-15.

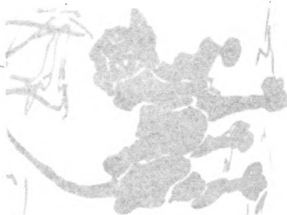
- Freud, S. Three contributions to the theory of sex. (Brill Translation), New York: Mod. Lib., 1938.
- Freud, S. Psychogenic visual disturbances according to psychoanalytical conceptions. Collected Papers, Vol. II., London: Hogarth, 1956 (a).
- Freud, S. Instincts and their vicissitudes. Collected Papers, Vol. IV., London: Hogarth, 1956 (b).
- Goldiamond, I. Indicators of perception: I. Subliminal perception, subception, unconscious perception: An analysis in terms of psychophysical indicator methodology. Psychol. Bull., 1958, 55, 373-411.
- Goldstein, S. A projective study of psychoanalytic mechanisms of defense. Ph. D. Dissertation, Univ. of Michigan, 1952.
- Goodman, P. On a writer's block. Complex. 1952, #7, 42-50.
- Guttman, O. Exhibitionism: A contribution to sexual psychopathology based on twelve cases of exhibitionism. J. clin. exp. Psychopath., 1953, 14, 13-51.
- Karpman, B. The sexual offender and his offenses. New York: Julian Press, 1954.
- Kinsey, A.C., Pomeroy, W.B., Martin, C.B. and Gebhard, P.H. Sexual Behavior in the Human Female. Philadelphia: Saunders, 1953.
- Lazarus, R.S. Is there a mechanism of perceptual defense? A reply to Postman, Bronson, and Gropper. J. abnorm. soc. Psychol., 1954, 49, 396-398.
- Lazarus, R.S., and McCleary, R.A. Autonomic discrimination without awareness: A study of subception. Psychol. Rev., 1951, 58, 113-122.
- Levin, M. A new fear in writers. Psychoanalysis, 1953, 1, 24-36.
- London, L. and Caprio, F. Sexual Deviations. Washington: Linacre, 1950.

- Lorand, S. Clinical studies in psychoanalysis. New York: Int. Univ. Press, 1950.
- Nelson, S. E. Psychosexual conflicts and defenses in visual perception. J. abnorm. soc. Psychol., 1955, 51, 427-433.
- Osgood, C. E. Method and theory in experimental psychology. New York: Oxford Univ. Press, 1953.
- Postman, L., Bruner, J. S., and McGinnies, E. Personal values as selective factors in perception. J. abnorm. soc. Psychol., 1948, 43, 142-154.
- Reik, T. Men, women and homes. Psychoanalysis, 1953, 1, 24-36.
- Rickels, N. K. Exhibitionism. Philadelphia: Lippincott, 1950.
- Schmaltz, G. Beitrag zur Problem des Exhibitionismus. (A contribution to the problem of exhibitionism). Psyche, Heidel., 1953, 6, 699-713. (abs).
- Schneider, D. E. The psychoanalyst and the artist. New York: Int. Univ. Press, 1950.
- Siegel, S. Nonparametric statistics. New York: McGraw Hill, 1956.
- Smock, C. D. Replication and comments: "An experimental reunion of psychoanalytic theory with perceptual vigilance and defense". J. abnorm. soc. Psychol., 1956, 53, 68-73.
- Stekel, W. Patterns of psychosexual infantilism. New York: Liveright, 1952.

APPENDIX I

On the following pages are reproduced the four stimulus pictures used in the study. They are the same size as those given to the subject during the sensitization procedure. They are, in order: Exhibitionism, Scopophilia, Neutral-1, Neutral-2.

Following these is a reproduction of one of the stimulus cards projected in the tachistoscope. This is an exact copy of card 8 (see p.27).



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APPENDIX II

The following pages are the data sheets used for each subject. Original data was recorded from the subject's statement as: T (top), B (bottom), R (right), or L (left), and transcribed to the coded sheet after all data for the subject had been collected.

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