Appendix 4: Discussion of Psychophysiological Measurement of Sexual Orientation

We have chosen in this research study to rely on self-report measures and survey questionnaires to assess the sexual orientation of our research participants. One challenging question that will be posed of our methodology is our rationale for not using psychophysiological measurement of sexual response to assess changes in sexual orientation. For example, David Myers, a prominent Christian psychologist with strong sympathies for full acceptance of gays and lesbians[i] has argued that the most rigorous scientific study of the question of change of homosexual orientation would utilize "behavioral" (i.e., psychophysiological) measurement of sexual response, apparently on the rationale that these supposedly utterly objective measures are superior to putatively subjective self-report measures of sexual response.[ii]

We considered and rejected the us of psychophysiological measurement of sexual response for three basic reasons: First, given the geographical dispersion of our subject pool and our subsequent inability to establish a central and accessible psychophysiological laboratory, the modesty (to put it mildly) of our funding, the substantial demands in time and energy we were already planning to make on our subject population to complete hours of interview questions and survey instruments, and the extensive demands (both in terms of time and the "personal intrusiveness") these methods make on research participants, we felt it simply impractical to include such psychophysiological measurement among our dependent variables. Second, it was our firm conviction that there are substantial questions about the validity of psychophysiological measurement of sexual response, leading us to conclude that such methods do not offer the kind

of scientifically valid measures that many imagine them to offer. Third, given the moral and religious groundings of the methods used by the Exodus ministries we were studying, the use of such methods would have resulted in high (if not unanimous) refusal rates and would, by the frame of reference of the individuals and ministries we were studying, have created iatrogenic damage of a moral and spiritual nature in our research participants. The short version of these three reasons: psychophysiological measurement in this study and with this population would have been impractical, of questionable validity and unethical. The judged impracticality of this methodology does not merit further discussion, but the latter two points do, and this discussion follows.

The Scientific Validity of Psychophysiological Measurement of Sexual Response

Many studying sexual response scientifically would argue that the best measure of sexual arousal in the male is penile tumescence. Geary Alford, Dan Wedding and Stanton Jones state that

> clinicians and researchers have generally assumed (at least implicitly) that penile tumescence is more difficult to control subjectively or to fake than are self-reports. Hence it is considered a more valid indicator of subjects' true levels of sexual arousal in response to clinically or experimentally administered sexual stimulus materials.[iii]

More recently and similarly, Richard McAnulty and Henry Adams assert that penile plethysmography appears to offer the advantages of face validity, objectivity and simplicity.[iv]

Penile plethysmography is defined as the measurement of erectile changes caused by engorgement upon arousal, and with the changes gauged quantitatively by volumetric or

circumferential devices by which variations in the circumference and length of the penis are measured.[v] According to Kaine, Crim and Mersereau, psychological studies have used this plethysmographic technique to measure arousal, often in combination with the measurement of other aspects or correlates of sexual arousal such as respiration, galvanic skin response, papillary size, EEG and cardiovascular activity.[vi] However, penile tumescence measures continue to be viewed as the most direct technique of the various options to measure arousal physiologically. Similar (in principle if not in technology) methods to measure female sexual response by gauging blood engorgement of the vaginal wall by color changes or temperature have been developed, but they are not as widely studied; we will here discuss only the evidence related to male psychophysiological assessment, with the assumption that the arguments advanced here hold for female psychophysiological measurement with regards to scientific validity, and also for ethics (see next section).

This discussion of the validity of this method for measuring arousal must begin autobiographically. Stanton Jones completed his APA-approved predoctoral clinical psychology internship at the research-orientated consortium program offered cooperatively by the University of Mississippi Medical Center and the Jackson, Mississippi, Veterans Administration Hospital. One of his four rotations was in inpatient psychiatry under the supervision of Professor Geary Alford. Early in the rotation Alford offered Jones the opportunity to participate in the completion of a fascinating single-case behavioral study using penile plethysmography to measure sexual arousal, subsequently published in an article titled "Faking 'Turn-ons' and 'Turn-offs.' "[vii] The case was introduced to Jones in the following way: The subject/patient was a married man who had presented to Alford for treatment of homosexual arousal. The subject was administered a

course of cognitive-behaviorally oriented treatment utilizing principally covert sensitization, a technique where a patient is trained to generate highly aversive imagery to deter or diminish undesired responses. To be specific, this subject was trained to respond to homosexual arousal by imagining having a "putrefying penis from a corpse forced into his mouth."[viii] Alford and a previous predoctoral clinical psychology intern, Danny Wedding, had designed an elegant single-case design to track the anticipated progress to be made by the subject, and in fact demonstrated (1) a clear pretreatment pattern of erratic and modest sexual arousal to appropriate (i.e., adult heterosexual) sexual stimuli presented in the form of audiotaped sexual vignettes, as measured by penile plethysmography, (2) a clear pretreatment pattern of sexual arousal to inappropriate (i.e., homosexual) sexual stimuli presented in the form of audiotaped sexual vignettes, again as measured by penile plethysmography, and (3) fairly clear post-treatment decline and eradication of pattern of sexual arousal to undesired (i.e., homosexual) sexual stimuli and a rebound upward of appropriate arousal to normal heterosexual stimuli. At the time Jones joined the rotation, this case was being written up by Alford and Wedding as a clearly successful application of cognitive-behavioral therapy to undesirable deviant sexual arousal.

At this point, however, the patient complained to Alford that the therapeutic intervention had in fact been utterly unsuccessful, as the original presenting pattern of arousal to undesired stimuli and lack of arousal to appropriate stimuli was still experienced. When asked how this could possibly be, given the clear scientific evidence for significant change from the penile plethysmograph, the patient simply replied that he had employed the very cognitive-behavioral skills taught in the therapy to channel his arousal according to the demand characteristics of the experimental/therapeutic situation. The patient, in short, had been faking turn-ons and turnoffs as

the research report title eventually claimed. Alford and Jones then designed and implemented a single-case methodology to measure, with equal scientific rigor to the original case study, that the subject could voluntarily control and direct his arousal as claimed.

Now cooperating fully with the assessment instructions rather than trying to "fool the machine" (and the researchers/clinicians), the subject established with absolute clarity his ability, under one set of instructions to simulate therapeutic success, to block arousal to inappropriate stimuli through the use of such covert methods as thought-stopping and aversive imagery, and then his ability to attain over 90% erection to appropriate stimuli by attending to covert sexual fantasies. Then, under a different set of instructions to demonstrate what the subject regarded as the true state of affairs, treatment failure, the subject demonstrated no arousal to appropriate stimuli and manifested over 90% erection to inappropriate stimuli. In short, the subject demonstrated his ability under one set of instructions to "fake" being a treatment success, and then under different instructions to show that the treatment had actually been a complete failure. In the words of Alford and colleagues, "this patient was able to suppress or generate arousal with almost perfect reliability, parallel to instructions."[ix] Thus this tightly controlled single-case design study established that a male participant could quite reliably suppress or generate sexual arousal precisely in response to specific experimental instructions. Jones took away from the experience the knowledge that machines could be fooled, and that some significant level of voluntary control of a demonstration of sexual arousal was quite possible.

This was not the first demonstration that the physiological measurement of sexual arousal was not always veridical. D. R. Laws and M. L. Holmen established that clients were capable of

producing penile responses to stimuli that were not erotic to them.[x] Likewise, they were also able to inhibit their erectile response to stimuli that they normally found sexually arousing. Other recent research has challenged the validity of plethysmography by demonstrating that sexual arousal can be conditioned or learned. This can distort assessment regarding which stimuli are or are not "naturally" arousing and can lead to results that are inaccurate or in the least empirically questionable. For instance, Joseph Plaud and J. R. Martini conducted a study showing that sexual arousal can be classically or respondently conditioned in human males while employing a random control procedure.[xi] This data raises questions concerning the results obtained via penile tumescence.

Unlike the foregoing studies, most of the research critical of penile plethysmography has demonstrated the ability to suppress unwanted arousal, to fake a turnoff, while the ability to produce arousal on demand to nonarousing stimuli, to fake a turn-on, has been more elusive. Kaine, Crim and Mersereau, in testing the ability to fake positive arousal, prompted participants to choose one from the six categories (2 X 3: male or female; prepubertal, pubescent, or mature) to which they were not attracted. They were instructed to attempt to produce an erectile response as if the chosen stimuli represented their sexual preference. The results indicated no ability to fake sexual response or any significant difference between the two groups (ten sex offenders versus ten nonsex offenders) in plethysmographic measurement. However, they did find "a clear ability to suppress penile response to preferred stimuli, both as determined by the subject's choice and by measurement of tumescence," demonstrated in both sex offender and nonsex offender groups.[xii] A study completed by Robin Wilson confirmed earlier observations that the penile tumescence test (specifically regarding age preference for sexual arousal) has the potential

to be faked.[xiii] Subjects were able to control their penile response under conditions of instructed faking, with subjects showing a pattern that it was easier to suppress a response to arousing stimuli that it is to fake an arousal response to nonarousing stimuli. Further, McAnulty and Adams investigated the effectiveness of a signal detection task in eliminating faking during the penile tumescence procedure and on the influence of an incentive on such behavior.[xiv] In their study, one-third of the participants were capable of complete suppression of undesired arousal, and another third exhibited no significant ability to suppress genital arousal. Even though participants were able to reduce erectile response, they were not able to fake so effectively that a subjective observer would incorrectly identify their sexual orientation. Even so, the researchers suggested that the use of plethysmography as a "lie detector" regarding sexual arousal patterns would be invalid and unethical. They proposed that further research needs to be done on the type of cognitive processing of sexual information that occurs during sexual arousal.

Although this phenomenon has been observed and described in many scientific studies, it is scientifically unclear exactly how such control is accomplished. The erectile suppressive mechanism is presumed to be some form of distraction or attentional shift, while those capable of "arousal on demand" may simply be those most capable of generating potent, arousing imagery under distracting circumstances. Why and how these methods work for some individuals and not for others remains a mystery. There are many other competing explanations possible

This pattern of findings has led to a reexamination of the idea of measurement of penile tumescence as the "true" index of arousal. According to Laura Delizonna and colleagues, the mere presence of an erection (as measured by the instrument) does not automatically and

univocally equate to physical or mental feelings of sexual arousal.[xv] They assert that careful attention to the psychosexual components of an individual's sexual experience are crucial to understand his or her experience of sexual arousal. In empirical support for their contentions, they found that feelings of sexual arousal emerged when participants in their study attained an erection via self-stimulation while watching an erotic video. When examining the participant's self-report rating, these same mechanically attained erections stimulated virtually no subjective sexual arousal or feelings. Hence, an erection does not necessarily mean that an individual is aroused beyond one's genitalia; put differently, genital arousal may be a fragmented response that is not fully indicative of the whole person's state of sexual arousal. Other components appear to be at least as important as genital response in conceptualizing and explaining sexual arousal.

The subjective struggles of the participants in our study were directed at various aspects of their perceived gay or lesbian sexual orientation. Sexual orientation includes not simply sexual behavior in the form of genital response but also encompasses sexual and erotic longing, thought and fantasy life, emotional attraction (including infatuation and "falling in love"), having one's needs met, and a desire for a vulnerable, intimate connection with another. While much of the literature has focused on behavioral response because it is quantifiable, we have a much more limited understanding on how to quantify and qualify the interior landscape of attraction, fantasy and emotional connection, but it is certain that such aspects of arousal and orientation must prominently feature self-report of some kinds. As Eric Koukounas and Ray Over insightfully point out, no measure comparable to genital vasocongestion has been developed for assessing the

level of one's psychological sexual desire.[xvi] It would appear that self-report techniques are the best option to investigate this crucial realm.

The Moral and Ethical Acceptability of Psychophysiological Measurement of Sexual Response

The moral and ethical acceptability of these psychophysiological measures of sexual arousal, as all methods of intervention (whether for the purposes of assessment or therapy), must be assessed from the perspective of the professional and from the perspective of the recipient of the professional's intervention (research participant or therapeutic client). The use of "sexual surrogates" in sex therapy, similarly, must be evaluated both in terms of the professional ethics of the therapist but also the ethical and moral views of the therapy client (as, for instance, in Bernard Apfelbaum's study).[xvii]

We are focusing here on the perspective of the research participant being assessed. Although the various member ministries that form Exodus may utilize different methods to achieve desired outcomes, there is some commonality of perceived range of those acceptable methods and of desired outcomes. Exodus International seeks to provide support for change from a biblical perspective for those who are struggling with homosexuality, lesbianism or bisexuality. Groups may focus on prayer, study of Scripture, spiritual healing, worship through singing, group support and accountability to desired goals, or individual therapy. All of these methods, whether nominally sacred or secular, are offered because they are deemed congruent with scriptural goals and practices. The methods used are all directed toward helping the individual understand who he or she is as a sexual person created by God and how to live in a way that honors the biblical principles of sexuality. Any method of assessment or change that itself embodied practices judged incongruent with biblical principles of sexuality would be unacceptable in these groups.

One of the most important goals for any participant in an Exodus ministry is sexual purity. Such purity includes at the minimum stopping overt immoral sexual patterns in which they may have engaged, but desired change toward sexual purity does not stop there. Participants are urged to purge their thought lives of immoral sexual images. The scriptural basis for this stance comes from the words of Jesus in Matthew 5:27-30:

> You have heard that it was said, "Do not commit adultery." But I tell you that anyone who looks at a woman lustfully has already committed adultery with her in his heart. If your right eye causes you to sin, gouge it out and throw it away. It is better for you to lose one part of your body than for your whole body to be thrown into hell. And if your right hand causes you to sin, cut it off and throw it away. It is better for you to lose one part of your body than for your whole body to go into hell. (NIV)

This passage is viewed by traditionalist Christians as embodying both a moral normative judgment that lust is wrong and a moral imperative to avoid such responses and to discipline oneself to avoid it. On this basis the following sorts of practices are viewed as morally undesirable: sexual fantasy about immoral actions, masturbation (because of its typical incorporation of sexual fantasy) and consumption of erotic sexual images, whether in the form of literary pornography, print pornography, Internet pornography or other forms.

Exodus groups are designed to be safe places for individuals to see how their Christian faith and their sexuality interact. Success in an Exodus ministry does not always mean that an individual

converts perfectly to a heterosexual orientation, even if this constitutes the ideal outcome. Many Exodus groups aim at the liberation of the individual from their "bondage" to sexual patterns, experiences, identities and attitudes contrary to Christian teaching; liberation from such "bondage" to homosexual patterns of action (but also to patterns of lust, pornography, fantasy and even mental preoccupation) may fall short of conversion to heterosexuality and yet still be deemed a "therapeutic success."

Given this context the ethical unacceptability of psychophysiological assessment of sexual orientation to our research participants and the groups referring them to us is patently obvious. Psychophysiological assessment of sexual response involves, at a minimum, having the research subject, for the sake of the assessment process, fantasize about a variety of sexual action possibilities that are specifically designed to be arousing to the viewer, and often the subject's active consumption of a variety of pornographic materials as an aid to fantasy. Viewing pornography (whether printed, web-based, video or virtual) would be in direct discord with the stated goals of most participants and of their sponsoring groups. Had we attempted to use such methods, we would have not received referrals from participating Exodus groups and would have had high, if not total, refusal rates from participants.

One analogy to this assessment dilemma would perhaps be the deliberate exposure of recovering alcoholics committed to total abstinence to alcoholic drinks to test treatment effectiveness; such an intervention would be utterly unacceptable to those pursuing complete abstinence. This is nonetheless an incomplete analogy, as it fails to incorporate a true matter of morality: the recovering alcoholic may believe that sobriety demands complete abstinence from alcohol and

may be strongly resolved to not consume alcohol, but while drinking in abstinence-oriented programs and approaches may be viewed as self-defeating, it is not viewed as immoral. For Christian subjects, exposing oneself to sexually arousing materials is immoral—an instigation of lust—and counter to the personal commitment to moral practices that the programs demand or urge.

The moral and ethical issues for us as researchers must be mentioned as well. Stanton Jones experienced personal moral conflict in participating in the Alford study, as his participation involved the administration of pornographic auditory stimuli to the subject of the study for the direct and deliberate purpose of creating sexual arousal ("instigating lust" in traditional Christian perspective). This conflict was mitigated by the lack of moral concern per se on the part of the subject, and the scientific prospects of the knowledge to be obtained from the study.

Summarizing the ethical and moral concerns: From the viewpoint of the referring ministries and of the majority of the subjects themselves, subjecting participants to viewing pornographic material in order to measure their sexual responses would have been judged as immoral in and of itself, and as likely to may harm the client emotionally and spiritually and hence as counterproductive to the achievement of their goals of stopping destructive patterns and moving toward significant change. By participation in the various ministries the participants were seeking—at the instigation of the various ministries—to cultivate a lifestyle of holiness and wholeness; thus exposing them to erotic materials would have been viewed as detrimental to their motivation and eventual outcomes. As researchers we judged it our obligation to conduct

ourselves within the boundaries of these ethics, boundaries with which we were in general agreement.

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[i]See David G. Myers and Letha D. Scanzoni (2006), *What God Has Joined Together: The Christian Case for Gay Marriage* (San Francisco: HarperSanFrancisco).

[ii]Myers, D. G. (2003). Sexual reorientation? Retrieved February 8, 2003, from www.davidmyers.org/sexorient/Spitzer.html. Myers argued: "Given the ambiguity of after-the-fact testimonials (one can collect such for consumers of snake oil, homeopathy, and therapeutic touch), researchers who evaluate therapeutic effectiveness now routinely turn to the most powerful tool for winnowing wishful thinking from reality: the controlled experiment. It's routine, and it's a wonder that both believers and skeptics of sexual reorientation are not calling for such research (which to my knowledge has never been done). It would involve three simple steps:

a. Identify a group of volunteers wishing to undergo sexual reorientation. Ask them to report their feelings and fantasies, and measure their sexual responding to same- and other-sex stimuli.

b. Randomly assign some to receive the treatment, the others to a wait-list control group (and/or to various alternative therapies)

c. At some point after the treatment, reassess sexual orientation by the self-report *and behavioral measures*.

Would this experiment be precluded by cost or by too few volunteers (who would lack the patience to permit their assignment to the control group)? Other therapy experiments, including a big NIMH depression/therapy experiment, suggest that this could be done. But if not, it would still be informative, even without the control group, to follow a group of people seeking sexual reorientation from before to after therapy."

[iii]Alford, G. S., Wedding, D., & Jones, S. (1983). Faking "turn-ons" and "turn-offs": The effects of competitory covert imagery on penile tumescence response to diverse extrinsic sexual stimulus materials. *Behavioral Modification, 7*(1), 113.

[iv]McAnulty, R. D., & Adams, H. E. (1991). Voluntary control of penile tumescence: Effects of an incentive and a signal detection task. *The Journal of Sex Research, 28*(4), 557-577.

[v]Rosen, R. C., & Beck, G. (1988). *Patterns of sexual arousal: Psychophysiological processes and clinical applications. New* York: Guilford.

[vi]Kaine, A., Crim, M., & Mersereau, G. (1988). Faking sexual preference. *Canadian Journal of Psychiatry, 33,* 379-385.

[vii]Alford et al. (1983).

[viii]Ibid., p. 117.

[ix]Ibid., p. 123.

[x]Laws, D. R., & Holman, M. L. (1978). Sexual response faking by pedophiles. *Criminal Justice Behavior, 46,* 1517-1518.

[xi]Plaud, J. J., & Martini, J. R. (1999). The respondent conditioning of male sexual arousal. *Behavior Modification, 23(*2), 254-268.

[xii]Kaine et al. (1988), p. 384.

[xiii]Wilson, R. J. (1998). Psychophysiological signs of faking in the phallometric test. *Sexual Abuse: A Journal of Research and Treatment, 10*(2), 113-126.

[xiv]McAnulty & Adams (1991).

[xv]Delizonna, L. L., Wincze, J. P., Litz, B. T., Brown, T. A., & Barlow, D. H. (2001). A comparison of subjective and physiological measure of mechanically produced and erotically produced erections (Or, is an erection an erection?). *Journal of Sex and Martial Therapy, 27,* 21-31.

[xvi]Koukounas, E., & Over, R. (2001). Habituation of male sexual arousal: Effects of attentional focus. *Biological Psychology, 58,* 49-64.

[xvii]Apfelbaum, B. (1989). Retarded ejaculation: A much-misunderstood syndrome. In S. Leiblum & R. Rosen (Eds.). *Principles and practice of sex therapy: Update for the 1900s* (pp. 168-206). New York: Guilford.