as simple "elementary" hallucinations and progressed to complex, formed hallucinations.
3. Persecutory delusions, often incorporating coexistent complex hallucinations.
4. Acute confusional states. In some reports, these were seen as beginning with simple inattention and difficulty in concentration. In others, the onset was described as sudden. The confusional state and disorientation was in several reports described as resembling a dissociative, dreamlike state, at times involving features of a catatonic stupor, including negativism and mutism, and upon recovery leaving a residual amnesia for the events of the confusional state. Ganser and others observed hysterical conversion symptoms during this confusional state.
5. Vorbereiden: An infrequent finding, mostly described in conjunction with a confusional, hallucinatory state.
6. Motor excitement, often associated with sudden, violent destructive outbursts.
7. Characteristic course of the illness:
a. Onset was described by some authors as sudden, by others as heralded by a progression beginning with sensory disturbances and/or inattention and difficulty in concentration.
b. In many cases, rapid subsidence of acute symptoms upon termination of solitary confinement.

The German reports were generally based upon prisoners who had been hospitalized because of their psychotic illness; in contrast, the population reported upon in the Walpole study was not preselected by overt psychiatric status; despite this, all of the major symptoms reported by the German clinicians were observed in the Walpole population, except for Vorbereiden and hysterical conversion symptoms. In addition, less severe forms of the isolation syndrome were observed in the Walpole population, including:

- Perceptual distortions and loss of perceptual constancy, in some cases without hallucinations.
- Ideas of reference and paranoid ideation short of overt delusions.
- Emergence of primitive aggressive fantasies which remained ego-dystonic and with realty-testing preserved.
- Disturbances of memory and attention short of overt disorientation and confusional state.
- Derealization experiences without massive dissociative regression.

Since Ganser's report has become the twentieth century's clearest memory of a much vaster body of literature, it is also of interest to review the literature describing observations of Ganser's Syndrome in non-prison populations. Several of these reports have been studies of patients in psychiatric hospitals suffering from this syndrome. Since these patients were hospitalized, it was possible to obtain more extensive evaluation and testing of their status. Several reports (Ingraham & Moriarity, 1967; May, Voegele & Padino, 1960; Tyndel, 1956; Weiner & Braiman, 1955) described a majority of the patients studied as suffering long standing hysterical conversion symptoms. Impulsivity, childhood truancy, and antisocial behavior were also commonly described. These findings suggest also that antisocial behavior patterns and psychopathic personality disorder may bear a close relationship to primitive hysterical personality disorder, a relationship which has been described by other authors as well (e.g., Woodruff, Goodwin & Gaze 1974).

EXPERIMENTAL RESEARCH ON THE PSYCHIATRIC EFFECT OF PROFOUND SENSORY DEPRIVATION: FACTORS INFLUENCING VULNERABILITY TO PSYCHIATRIC HARM

As noted in the body of this declaration, laboratory research has demonstrated that experimentallyinduced sensory deprivation has major psychological effects, and can precipitate severe psychiatric illness (see e.g. Brownfield, 1965; Solomon 1961). Much of the research in this area attempted to delineate factors, in addition to the duration and intensity of sensory restriction, which might account for these differing outcomes; the factors which have been elucidated include two which are especially relevant to this discussion, and may help to explain the particular malignancy of sensory deprivation in solitary confinement:

The Influence of Expectation

Orne and Scheibe (1964) suggested that a subject's reaction to participation in a sensory deprivation experiment could be profoundly manipulated by external cues imposed by the experimenter:

"[These] dramatic effects could be a function of the demand characteristics of the experimental situation. ... There is evidence that preparing a subject for probable hallucinations significantly affects the frequency of hallucinations. Such devices as 'panic buttons' in experiments ... are in a sense eloquent instructions. The use of such a device increases the subject's expectation that something intolerable may occur, and

with it, the likelihood of a bad experience. (p. 4)
In their own experiment, Orne and Scheibe exposed two groups of subjects to identical conditions of sensory deprivation. The experimental group's introduction to the experiment included the presence of a medical "Emergency Tray," and instructions about a "Panic Button." As predicted, the experimental group became significantly more symptomatic in measures of cognitive impairment and restlessness, and also more symptomatic in every other measure -- including perceptual aberrations, anxiety, and spatial disorientation.
In a related manner, prisoners in solitary confinement generally view such confinement as threatening and punitive, and often as a deliberate attempt to make them "crack up" or "break my spirit." In light of this , it is not surprising that the only recent report suggesting no major ill effect of solitary confinement (Walters, 1963) utilized prisoners who volunteered to spend four days in solitary confinement.

Individual Differences in Response

Several authors have directed attention to the fact that within a given experimental format, massive differences in response can be observed among individual subjects. Often subjects who tolerated the experimental situation well reported pleasant, or at least non-threatening, visual imagery, fantasy, and hallucinatory experiences:

"His mind may begin to wander, engage in daydreams, slip off into hypnogogic reveries with their attendant vivid pictorial images ... he may be quietly having sexual and other pleasurable thoughts. (Wright & Abbey, 1965, p. 6)

On the other hand:

"Another subject in the same situation may deal with it in quite another manner. He may soon complain of all manner of things: the bed is causing him a backache, his mind is a blank,... intense boredom, tenseness, depressive feelings or of having unpleasant thoughts or picture-like images that disturb him." (Goldberger, 1966, p. 777)

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In response to these concerns about the incidence of psychopathological reactions to sensory deprivation, an important thrust of the experimentation in this area has been, by prescreening, to select as subjects only those persons demonstrating, by some measure, psychological strength and capacity to tolerate regression. The theoretical premise of such work has been, as Goldberger (1966) states:

"In the sensory deprivation experiments, it is the ego's autonomy from the drives that is predominately involved. ... Differences in drive-discharge thresholds, phantasy, and daydream capacity, capacity for what Kris has termed "regression in the service of the ego" are other theoretically relevant structural dimensions accounting for differences in isolation behavior." (p. 778)

These ideas have been subjected to experimental verification, which has corroborated that same individuals tolerate such isolation better than others. For example, Wright and Abbey (1965) using the Rohrshach Test for prescreening, concluded that:

"[The Rohrshach] manifestations of an individual's defense and control mechanisms ... appears to be a reliable measure for predicting whether or not an individual will be effective in controlling the drive-dominated responses that might emerge during his period of reduced sensory stimulation." (Wright & Abbey, 1965, p. 37)

Anecdotal reports in a similar vein appear from time to time in the literature. Freedman and Greenblatt (1960) mention one subject who became panicky during sensory deprivation and stated he had been diagnosed "borderline psychotic" (p. 1489). Curtis reports on a psychotic paranoid reaction in one subject who suffered delusions for several days afterwards, and severe anxiety and depression lasting several weeks; personality test prescreening had suggested "poor adjustment, hostility, lack of insight, and insecurity in interpersonal relationships" (Curtis & Zuckerman, 1968, p. 256).
Grunebaum, Freeman, and Greenblatt (1960), prescreened 43 subjects and identified 7 as suffering "personality deviations." Two of these subjects, who were diagnosed as borderline, developed frightening, aggressive fantasies, paranoia, and difficulty in reality testing; one of them prematurely terminated the experiment. Two others were diagnosed as psychopathic; both forced the premature termination of the experiment by disruptive behavior.
Azima and Kramer (1956), using interview techniques and formal psychological test data, studied the effects of 2 to 6 days of sensory deprivation on hospitalized psychiatric patients. Among the previously non-psychotic patients they studied, two developed overt paranoid psychoses during the experiment, ultimately necessitating electroshock treatment. These particular individuals appeared to have been unable to tolerate the emergence of aggressive fantasies and images during the sensory deprivation experience.

Effects of Sensory Deprivation on Antisocial Personality Disorder:
"Aversive Conditioning"

Individuals with psychopathic personality disorder are probably among the least tolerant of sensory deprivation. Quay (1965) actually described the essential core of psychopathic pathology as a pathological inability to tolerate restricted environmental stimulation:

"The psychopath is almost universally characterized as pathologically stimulus seeking and highly impulsive. ... He is unable to tolerate routine and boredom. ... (His)

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outbursts frequently appear to be motivated by little more than a need for thrill and excitement. ... It is the impulsivity and lack of even minimal tolerance for sameness which appear to be the primary and distinctive features of the disorder." (p. 180)

He goes on to argue that psychopathic individuals may chronically exist in a state of relative stimulus deprivation:

"Highly impulsive psychopathic behavior [may be seen] in terms of stimulation seeking pathology. Decreased reactivity and/or rapid adaptation [to environmental stimuli]... produce in these persons an affective state ... close to that produced by sensory deprivation in the normal individual.

He argues that behavioral impulsivity in such individuals may be an effort at coping with this condition of relative sensory deprivation which they experience:

"It may be possible to view much of the impulsivity of the psychopath, his need to create excitement and adventure, his thrill seeking behavior, and his inability to tolerate routine and boredom as a manifestation of an inordinate need for an increased or changing pattern of stimulation." (p. 181)

In a later study, directly comparing psychopathic inmates with non-psychopathic controls, Emmons & Webb (1974) corroborated these findings; the psychopathic inmates scored significantly higher on measures of boredom susceptibility and of impulsivity. The authors concluded that psychopaths are pathologically stimulation seeking and incapable of tolerating isolation conditions.

In a large scale study of criminal offenders suffering from mental illness, Cota & Hodgins (1990) noted that the prevalence rate of severe mental illness is higher among incarcerated offenders than among the general population; and that, compared with non-mentally ill inmates, the mentally ill inmates were more likely to be housed in solitary. (p. 271) Moreover many of these mentally ill inmates suffered from a combination of psychiatric disorders predisposing them to both psychotic breakdown and to extreme impulsivity (often including substance abuse). (p. 272). Such individuals tended to be highly impulsive, lacking in internal controls, and tended to engage in self-abusive and self-destructive behavior in the prison setting, and especially so when housed in solitary.

Many of the inmates placed in solitary confinement are thus likely to be among the least capable of tolerating the experience, and among the most likely to suffer behavioral deterioration as a consequence of such confinement. Solitary confinement has at times been rationalized as being a form of "Aversive Conditioning", intended to extinguish negative inmate behaviors. Yet this assertion ignores many of the most basic tenets of any behavior modification treatment, and would in any case clearly violate the ethical guidelines governing the use of aversive conditioning:

1. **Ethical Considerations:**

First of all, since aversive conditioning -- the use of punishment as a means of inducing behavior change -- is inherently suspect ethically, and creates an inherent risk of harm, very clear outcome variables have to be articulated and systematically measured over time. (Foxx, Plaska and Bittle, 1986; AABT Task Force 1982) As a result of these serial measurements, there must be clear evidence that the undesirable behavior is in fact lessening in frequency and intensity. Such measurement will also identify those patients for whom such aversive conditioning is actually harmful, allowing these individuals to be removed from the aversive treatment protocol. Were such measurements done in the prison setting, staff would inevitably be required to acknowledge the behavioral deterioration which many inmates were suffering as a result of placement in solitary, and in such c ases, ethical considerations would have required transferring the inmate out of such confinement.

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2. **SHU Incarceration is Not Aversive Conditioning:**

And moreover, SHU incarceration does not meet criteria for aversive conditioning. (Personal Communication; 1993 Drs. R. Worshan and M. Israel) (AABT; 1982 Foxx et al., 1986) Indeed, any behavior modification scheme must define and describe very explicitly two variables:

(a) **The behavior being changed:**

Behavior researchers have learned that in order for a subject to benefit from aversive (or any other form of) conditioning, the behavior at issue must be a single, very clearly defined behavior. When multiple behaviors are responded to by the same reinforcer or punishment, learning and behavior change does not occur. Thus, placement in SHU which is "punishment" for a host of different behaviors, is simply not

being used in a manner consistent with an intent of behavior modification; there is inadequate linkage of any specific behavior to this "punishment."

(b) **The "punishment"**:

Moreover, SHU confinement is quite clearly not "punishment" as defined by aversive conditioning experts. (Personal Communication: Drs. R. Worsham and M. Israel, 1993) To be effective, a "punishment" must be very closely linked in time to the targeted behavior, and for learning to occur, there must be repeated opportunities to experience this close link between the target behavior and the punishment. Thus, the "punishment" must be brief, and immediate. For example, a mild but painful electric shock, a sudden very loud noise, would be ideal punishments in aversive conditioning.

Occasionally, "time outs" the brief use of a seclusion room to quickly control disruptive behavior -- are used as part of an aversive conditioning program. But when this technique is employed, it is used very quickly and for a very brief period of time -- in order for the "time out" to work as a behavior modifier, there must be very clear alternative behaviors which, when manifested, will immediately end the "time out."

For any behavior modification scheme to work, then there must always be an exquisitely close relationship between behavior and response. Indeterminate or prolonged sentencing to solitary simply has nothing to do with aversive conditioning.

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REPORTS OF THE LONG-TERM EFFECTS OF SOLITARY CONFINEMENT IN FORMER POLITICAL PRISONERS AND IN PRISONERS OF WAR: SOLITARY CONFINEMENT AS A MEANS OF "BRAIN WASHING" AND "INDOCTRINATING"

Although concerns about the psychiatric effects of solitary confinement among prisoners of war were raised in the medical literature at least as early as post World War II, this issue reached massive public exposure only after the fearful news of "brainwashing" among American prisoners of war in Korea. As is well known, the 1950's were an era of tremendous fear of Communism and of the attempts by Communist States to "indoctrinate" people into their ideology. As noted in the body of this declaration, in the 1950's the U.S. Department of Defense and Central Intelligence Agency sponsored a great deal of research on these issues; Hinkle and Wolff (1956) published results of extensive research done by them for the Department of Defense. The paper documented interrogation techniques of the Soviet KGB in regard to the incarceration of political prisoners, and the Chinese communists' imprisonment of American prisoners of war in Korea.

The report indicated that the KGB operated detention prisons, many of which were "modern . . . well built and spotlessly clean . . . (with) attached medical facilities and rooms for the care of sick detainees. An exercise yard is a standard facility. Incarceration in these prisons is almost universally in solitary confinement in a cell approximately 10' x 6' in size. An almost invariable feature of the management of any important suspect under detention is a period of total isolation in a detention cell." (p. 126)

This isolation was seen as a central feature of the imprisonment:

"The effects upon prisoners of the regimen in the isolation cell are striking. ... A major aspect of this prison experience is isolation. ... (In the cells) his internal as well as external life is disrupted (and) ... he develops a predictable group of symptoms, which might almost be called 'disease syndrome.'"

This syndrome develops over time:

"He becomes increasingly anxious and restless and his sleep is disturbed ... The period of anxiety, hyperactivity, and apparent adjustment to the isolation routine usually continues from 1 to 3 weeks. ... The prisoner becomes increasingly dejected and dependent. He gradually gives up all spontaneous activity within his cell and ceases to care about personal appearance and actions. Finally, he sits and stares with a vacant expression, perhaps endlessly twisting a button on his coat. He allows himself to become dirty and disheveled. ... He goes through the motions of his prison routine automatically, as if he were in a daze. ... Ultimately, he seems to lose many of the restraints of ordinary behavior. He may soil himself; he weeps; he mutters. ... It usually takes from 4 to 6 weeks to produce this phenomenon in a newly imprisoned man. ... His sleep is disturbed by nightmares. Ultimately he may reach a state of depression in which he ceases to care about his personal appearance and behavior and pays very little attention to his surroundings. In this state the prisoner may have illusory experiences. A distant sound in the corridor sounds like someone calling his name. The rattle of a footstep may be interpreted as a key in the lock opening the cell. Some prisoners may become delirious and have visual hallucinations.

Not all men who first experience total isolation react in precisely this manner. In some, the symptoms are less conspicuous. In others, dejection and other despondence earlier, or later. Still others, and especially those with preexisting personality disturbances, may become frankly psychotic." (p. 129)

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The authors note that the procedures in the Chinese detention camps are somewhat more complex. Prisoners there underwent an initial period of isolation similar to that found in the Soviet prisons. (p. 153) In the second phase, however they were housed in extremely tight quarters within "group cells" comprising approximately eight prisoners. Under the tensions and hostilities created in this environment, brutality of prisoners against other prisoners was almost inevitable and was, according to the authors, apparently an intended result of this "group cell" confinement. (p. 159)

There are many long-term studies of American prisoners of war; unfortunately, the factor of solitary confinement has not generally been separated out in these studies. However, one relatively recent study of Korean POWs describe long-term effects including interpersonal withdrawal and suspiciousness, confusion, chronic depression and apathy towards environmental stimuli. Irritability, restlessness, cognitive impairment and psychosomatic ailments were extremely common in the group, most of whom had suffered periods of incarceration in solitary confinement at the hands of the Chinese. This report also included a case report of one individual exposed to harsh conditions of solitary confinement for more than 16 months; 30 years after release, he continued suffering sleep disturbances, nightmares, fearfulness, interpersonal suspicion and withdrawal, severe anxiety and severe depression. These former prisoners also had psychosomatic ailments including gastrointestinal disturbances, chronic headaches and obsessive ruminations. They tended to become confused and thus cognitively impaired and were emotionally volatile and explosive.

In a more recent study, Sutker et al. (1991) studied former prisoners of war in the Korean conflict, approximately 40 years after their release from confinement. Solitary confinement was cited as one of the severe stressors in this group. These former prisoners demonstrated persistent anxiety, psychosomatic ailments, suspiciousness, confusion, and depression. They tended to be estranged and detached from social interaction, suffered from obsessional ruminations, and tended to become confused and cognitively impaired, suffering memory and concentration difficulties which affected their cognitive performance on formal testing.

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