REATIONS AND ATTRIBUTES OF PRISONERS IN SOLITARY CONFINEMENT

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In order to explore the effects of solitary confinement (SC) on penitentiary inmates, data were collected from volunteer respondents at five U.S. and Canadian prisons. Besides a structured interview, measures of personality, intelligence, mood, subjective stress, and creativity were administered. A questionnaire was used to identify ways of coping with the SC experience. Although the prisoners as a group differed from standardization samples on some of the tests, there were no dramatic differences between convicts who had experienced SC and those who had not. These data, which are unusual in that they were collected from actual convicts who were responding to SC as it is normally administered in their institution (as opposed to volunteer subjects under special conditions), do not support the view that SC in prisons is universally damaging, aversive, or intolerable.

The use of solitary confinement (SC, also known in various jurisdictions as dissociation or segregation) in prisons has given rise to an extremely heated debate, carried on at length by prisoners, members of the general public, and mental health professionals. Unfortunately, the amount of light shed by the disputants is tiny in comparison to the degree of heat. The two

Authors' Note: We are grateful for the cooperation of the Ministry of the Solicitor General of Canada, the Correctional Service of Canada, and the U.S. Bureau of Prisons, and for the unselshy collaboration of the inmates in the
major reasons for this are that, in the absence of appropriate empirical evidence, much of the dispute is based upon far-fetched extrapolations and generalizations, and the participants in the argument are far more concerned with influencing policy than they are with establishing facts.

Inferences are frequently drawn from the experiences of prisoners under special circumstances and the scientific literature on experimental stimulus reduction. In the former category are the autobiographical accounts of political prisoners, captured intelligence agents, leaders of minority groups, and so on, who are held in solitary confinement usually for the purpose of extracting confessions or recantations. In such settings the prisoners are usually held for indefinite periods, they are frequently not charged nor brought to open trial, a wide variety of physical and psychological deprivations and tortures are applied, and the prisoner may be held completely incommunicado. The literature reveals both the stressfulness of these experiences and the adaptive, and often extremely creative, coping techniques that prisoners develop (e.g., Bone, 1957; Burney, 1961; Gross & Svab, 1967).

A similar situation exists in the case of prisoners of war. The use of isolation in POW camps has historically been quite rare; in the twentieth century it has been typically used as a punitive technique for those prisoners who broke the rules or tried to escape. Systematic research on the treatment of POWs has focused primarily on the conflict in Korea and, to a greater degree, the Vietnam War. In Korea the treatment of UN prisoners concentrated on group processes, and solitary confinement was

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*Canadian and U.S. penitentiaries where the data were collected. Among those who helped with the collection or analysis of data were Deborah Clyne, Sheryl Mitchell, and Luzbea Pizano. Patricia Waldron organized and prepared the manuscript. We would also like to acknowledge our indebtedness to the administrations and staffs of the institutions where we collected the data. Particularly the key personnel included Dr. Meredith Friedman, Mr. H. Popp, Dr. Chuni Roy, and Dr. H. Stevens. Reprint requests and correspondence should be addressed to Dr. Peter Suedfeld, Department of Psychology, University of British Columbia, 2075 Wesbrook Place, Vancouver, B.C., V6T 1W5.*
relatively seldom used. In Vietnam, isolation was routinely imposed on many American prisoners, sometimes for as long as six years. Although this experience was stressful in varying degrees, most POWs reported a variety of effective coping mechanisms (Deaton, Berg, Richlin, & Litrownik, 1977). Here again, it should be pointed out that such factors as the complete power of the captor over the prisoner, the unknown and open-ended duration of captivity, the repeated threats of trial as war criminals, the cutting off of contact with friends and relatives at home, the lack of adequate diet, clothing, and medical care, and the not infrequent physical torture, make this experience significantly different from that found in most modern prisons (Lewis, 1974).

Obviously, isolation in a political prison or in a POW camp is not really comparable to the highly regulated, formalized, and limited procedures for imposing SC on convicts in the ordinary North American penitentiary. Even less appropriate is the comparison between the SC condition and field or laboratory experiments on isolation and stimulus reduction. To begin with, it is highly questionable whether the typical SC unit in fact imposes much reduction in stimulus input. In most such facilities prisoners can see and communicate with guards and fellow-inmates. They have access to reading matter, mail, lawyers, and other visitors, and frequently to radios and television sets. All of this contrasts dramatically with the sound-proof, darkened chambers or flotation tanks used in reduced stimulation studies (see Suedfeld, 1980). Moving from the general quarters of a penitentiary into SC probably poses much less of a difference than going from the normal environment of the typical experimental subject, who tends to be a university student or a person of similar background, into the experimental facility.

Other significant differences between the conditions are the duration of confinement, the amount of movement allowed inside the confinement area (experimental subjects are immobilized to a relatively high degree), the perceived benevolence of the people in charge, and the purpose for which the individual is undergoing the experience. Furthermore, experimental subjects—unlike SC
prisoners—can end their participation at will. Some of these
differences may make SC less severe than the laboratory tech-
nique, while others may do the opposite; their combination
makes a complex pattern that ensures noncomparability.

Penitentiary SC cannot be equated with the treatment of
political prisoners and POWs on the variables of the physical
conditions of confinement, the procedural safeguards and secur-
ity provided the prisoners, nor the consequent psychological
impact of the experience. In addition, there are probably drastic
differences in the personality characteristics of the people in-
volved. Aside from protective custody (frequently involving sex
offenders or informers, despised by their fellows), SC in peniten-
tiaries is typically imposed on people who have broken the rules
of the institution or who are suspected by the administration of
planning to do so in the future. The vast majority of these
violations consist of such activities as possessing or dealing in
contraband (alcohol, drugs or weapons), being involved in riots,
escape attempts or hostage-taking incidents, and verbal or
physical attacks on other prisoners or on members of the staff.
By definition, the individuals who find themselves in this
situation are people who have already been caught and convicted
of relatively major violations of the law; subsequently, they have
been either caught or at least strongly suspected of violating the
rules within the prison. In general, penitentiary inmates tend to
come from relatively low socioeconomic and educational strata.
In North America a disproportionate number are members of
disadvantaged minority groups.

By contrast, political prisoners are more likely to belong to an
intellectual and frequently to an economic elite. Their incarcera-
tion is the result of activities designed to further some overriding
cause beyond individual gratification. Their commitment to that
cause is buttressed by the knowledge that it is shared by fellow
members of some cohesive group. Such prisoners view their
captors as ideological, not merely personal, enemies. They
frequently react to the conditions of captivity as a challenge to be
surmounted in their continued struggle to reach a social and
political goal. Many of their reports give details of great suffering
under brutal conditions of imprisonment, but many also describe
excellent adaptation leading to major intellectual and ideological insights (Bukovsky, 1978; Burney, 1961; Sadat, 1978; Wurmbrand, 1969; etc.).

POWs who experience SC have frequently been the most recalcitrant in maintaining military morale and resistance to the captor forces, again building on esprit de corps and on a set of principles derived from their patriotic and military training. Frequently (and overwhelmingly in the case of the Vietnam POWs) this group is made up of career officers who are highly educated and mature individuals with ideological, professional, and family ties, and with a history of emotional stability and adaptation in their normal society.

The last frequently used comparison group, experimental subjects, are volunteers who in general show good adjustment and stable personality patterns (Myers, Murphy, Smith, & Goffard, 1966). In addition, the experimental literature is based to a great extent on subjects who are university students or graduates, again indicating a sampling bias in favor of higher levels of intelligence, education, and socioeconomic status.

Because of these differences in environmental and psychological variables, observers who try to use findings from these sources as an indication of what one can expect in penitentiary SC (e.g., Singer, 1971; Thoenig, 1972; Lucas, 1976) are basing their arguments on a body of data that is not really relevant to the phenomenon they are evaluating. Many of these writers, critical of the use of SC in prisons, cite only the reports appearing early in the history of stimulus-reduction research that emphasized bizarre adverse affects. They tend to ignore the more recent literature which shows that these effects were to a large extent due to experimental artifacts, and that stimulus reduction per se is quite tolerable and even pleasant for most subjects and can be used to enhance cognitive and behavioral functioning (Suedfeld, 1980).

This brings us to the next point, which is the anti-SC bias of much of the writing in this area. A great deal of it is generated in the course of political or judicial pressures either to end the use of isolation in prisons or to have a particular prisoner or group of prisoners released from SC. Outside observers tend to exhibit
sympathy more than empiricism and objectivity. Accordingly, negative reactions are emphasized, even when to do so the authors must distort or only selectively cite literature with which they are obviously familiar (Lucas, 1976; Shallice, 1972). As Sykes wrote about reports of prison life in general, the most publicized accounts “consist of sensational exposes, anecdotes, or cries of protest, the product of men intent on advancing a cause or catering to the curious” (1958 [1970] p. xiv).

The anecdotal literature, even including courtroom evidence or depositions given in support of the pleas of prisoners to be taken out of solitary confinement, is mixed. While many complain about SC, a number of convicts clearly use SC time for improving their intellectual and social adaptation (Gaddis, 1957; “John Doe,” 1980, among others). Prisoners who write books and engage in litigation are not representative of the average convict, so that their reactions to solitary confinement may not be the norm. Neither those who castigate the system nor those who attest to their own overcoming of its challenges can be held to be unbiased. The most that can be said is that there is a range of reactions to SC, from inmates who feel extremely stressed through those who think that SC is in some ways unpleasant but tolerable, to others who find the experience innocuous, relaxing, and an opportunity for contemplation and improvement. It may serve as a desirable time-out from the pressures and impositions of the general prison routine. The need for prisoners to be able to go into isolation voluntarily has been voiced by some organizations oriented toward prison reform, such as the John Howard Society of Ontario (1975), by incarcerated convicts (Scott & Gendreau, 1968; Suedfeld & Roy, 1975), and by student “prisoners” in the Stanford role-playing demonstration (Zimbardo, 1975).

One more, much smaller, body of literature is based on the extremely few attempts to make objective evaluations of solitary confinement and its effects. This literature has several major flaws. One problem is that the use of objective measures shows an almost perfect inverse correlation with the ecological validity of the procedure. Such measures have been usually administered
only in studies using very brief durations of isolation, almost always with volunteers from within the prison population. On the other hand, analyses of the effects of relatively long-term periods of solitude imposed in accordance with the usual institutional procedures (that is, as a punishment for rule violations or as a protective device) have concentrated on clinical judgment as the major method of assessing the dependent variables.

During a four-day social isolation experiment, volunteer convict subjects became somewhat more anxious and more negative toward the concept of "society"; on the other hand, their concept of "solitary confinement" improved. They also showed a slight reduction in verbalization after the experiment (Walters, Callaghan, & Newman, 1963). In other studies using convict volunteers, Gendreau and his coworkers have found that there were lower alpha frequencies in the EEG (Gendreau, Freedman, Wilde, & Scott, 1972), and that there were no changes in stress levels during or after a period under standard SC conditions as measured by plasma cortisol levels, heart rate, respiration, or body temperature (Eccleston, Gendreau, & Knox, 1974). In the latter study, the personal constructs of the subjects indicated increased stability, particularly for positive constructs. This change was related to individual differences, with conceptually simple (Schroeder, Driver, & Streufert, 1967) individuals demonstrating increased stability. Other studies by the same authors (Gendreau, 1969; Gendreau, Horton, Hooper, Freedman, Wilde, & Scott, 1968) similarly fail to show either physiological or cognitive/affective indices of aversiveness.

These studies can be criticized for using volunteers from among the general prison population. However, they were certainly closer to the real thing than the laboratory experiments and the autobiographical accounts of political prisoners so frequently cited by critics; at least the participants were somewhat representative of the North American convict population, and the environment was that of an actual penitentiary SC unit. There has been one study using prisoners who were not volunteers (Weinberg, 1967). A battery of perceptual and cognitive tests was administered before and after confinement to prisoners who had
been sentenced to five days of either severe SC or a restrictive, but much less severe, segregation environment. The five days of SC, characterized by partial stimulus reduction and social isolation, had no differential effects on closure, flexibility, vocabulary, abstractions, time estimations, and Rorschach responses.

Thus, the scant evidence available from environments that are close to those typically used in SC does not support the hypothesis that solitary confinement (at least for the periods used in these studies) leads to significant performance deterioration or aversive reactions. The use of volunteer subjects, the relatively short duration of isolation, and the reactive nature of the studies (with the prisoners knowing that their reactions were being observed much more closely than is usually the case) leave generalizations somewhat tenuous. Still, they seem much less so than generalizations from the literature frequently cited to "demonstrate" the negative effects of SC.

One more study should be mentioned, although it also provides only a remote equivalent of the standard SC situation (Suedfeld & Roy, 1976). The subjects were four inmates in a correctional psychiatric hospital who had been sentenced to either 7 or 30 days of SC for their part in a disturbance. They had been diagnosed as suffering from a variety of psychiatric disturbances including schizophrenia, so that they in no way represented the average convict. The conditions of confinement were altered for the purposes of the study; while the physical aspects of the SC unit were standard, the level of isolation and lack of communication was substantially increased. Social contact was made contingent upon the appearance of behavioral change. All of the prisoners involved did exhibit such change, sometimes including behavior such as talking to themselves. There was a major reduction in aggressiveness, violence, and self-injury. Following this experience all four of the subjects showed much improved adjustment and considerably fewer psychotic-like symptoms. Over two years later, three of the prisoners had been free in the community and out of trouble with the law for the longest periods ever since their childhood. The fourth was still serving his sentence, but had not been sent either into disciplinary segregation or back to the
psychiatric hospital in the interim. While the apparent improve-
ment shown by these prisoners cannot definitely be linked to the
modified SC experience, it is compatible with reports of reha-
bilitative success following a conjunction of isolation and counsel-
ing in other institutions (Glynn, 1957; Morse & Wineman, 1957).

Admittedly, it is difficult to do rigorous research on this
question. Even aside from the problems of gaining access to
institutions and getting the cooperation of prisoners, the situation
is by nature a very complex one. The physical conditions and
routines of isolation units vary widely. There may be so many
cells, and communication among them may be so easy, that there
is an extremely high level of constant stimulation. In other units,
solid doors and thick walls reduce both communication among
the prisoners and the total amount of stimulation. The comfort-
ableness of cells differs, as does their size. The access that
segregated prisoners have to such amenities as reading material,
their own possessions, hobby items, mail, visitors, exercise
outside the cell, showers, and so on is not standardized. Perhaps
even more important is the treatment of prisoners by their guards,
an issue that frequently arises in court testimony as a major
source of stress. Harrassment, physical roughness, enforcement
or nonenforcement of rules, unpredictable withholding of mail
and other privileges, and similar accusations seem to crop up
more frequently and to play a greater role than complaints about
the physical conditions or social isolation of the SC unit.
Additional problems arise from the fact that SC cells are usually
somewhat removed from such facilities as the kitchen, the
hospital or infirmary, and the offices of counselors. Thus, cold
food and delayed responses to requests for assistance are
common problems.

It is clear from the autobiographical material, as well as from
interviews, that all of these factors are extremely important in the
prisoner's reaction to SC. Of course, they have no necessary
relationship to being in an isolation unit. Stressful conditions of
this sort could easily be (and in some prisons are) imposed in the
normal dwelling quarters of the population. Conversely, SC units
that are arranged more pleasantly along these dimensions would
clearly be less aversive and might in fact be no more so than the normal living arrangements. Not only is there a great diversity in the nature of the environments that are lumped together under the label "solitary confinement," but the situation is confounded in complex ways by all of these variables.

Another problem is that there is no way to tell whether SC has reliable effects on behavior, attitudes, and personality unless one has data collected prior to the isolation experience. Unfortunately, such data are not available. Thus, the evidence is all post hoc and can be very misleading. In fact, the argument that SC makes prisoners hostile, aggressive, recalcitrant and unpredictable is based on exactly this logical fallacy: Given the fact that these are the very patterns of behavior that are likely to lead to a convict being put into SC, one might just as easily reverse the causal inference (Cormier & Williams, 1966). The only way to establish the actual effects of SC is to test individuals immediately upon (if not before) their first experience with any correctional institution, and perform appropriate testing at various stages of their penitentiary career.

The present study was not able to overcome this particular problem. However, it is a first step in the objective study of the effects of SC on convicted criminals in North American prisons and of some characteristics of SC inmates. All of the research dealt with standard SC conditions in a maximum- or medium-security institution. The participants were not involved in litigation or protests related to the penitentiary or to the isolation situation. The research team was identified as being university-based and unconnected with any partisan organization, either on the side of the administration or involved in prisoners' rights. The privacy of the respondents was guaranteed, and a standardized set of measures and interview questions was used.

This may be an appropriate place to indicate the bias of the current authors. After considerable research using the restricted environmental stimulation technique, the senior author was convinced that social isolation and stimulus reduction were innocuous for the vast majority of participants and extremely beneficial for many. Thus, although he was aware of the negative
reports from people writing about the SC experience, he was not convinced that all prisoners necessarily find it either aversive or harmful. However, he has argued previously (e.g., Suedfeld, 1974, 1978) that the unnecessary negative characteristics often associated with SC (harrassment by guards, inferior food, lack of sanitary facilities) should be eliminated, and that emphasis be put on the use of isolation as a rehabilitative experience. As such, it should be undergone on a voluntary basis, with a simultaneous deemphasis on (and preferably eventual stimulation of) its use as a punitive procedure. The other members of the research team all started with the expectation that SC would prove to be universally damaging and severely aversive. These opinions gradually changed during the course of data collection. This initial negative attitude and subsequent change are by no means unusual even in more benign settings where isolation is used experimentally or therapeutically (see, e.g., Schechter, Shurley, Toussieng, & Maier, 1969).

**METHOD**

**INSTITUTIONS**

In the various phases of the study, the cooperating institutions included two maximum-security prisons in the western part of the United States; one maximum- and one medium-security federal penitentiary in Canada; and a Canadian provincial medium-security institution.

**RECRUITING PROCEDURE**

Participants were recruited via forms handed out approximately ten days prior to the arrival of the research team in the institution. The forms identified the director of the research project and his university, and the purpose and the general procedure of the study. Potential participants were informed that no rewards would be offered for participation, nor punishments for not
volunteering or for choosing to terminate participation at any point along the research program. Privacy of respondents, and the confidentiality of their replies, were guaranteed. All volunteers signed a consent form which was then witnessed. We found that the vast majority of the individuals then in SC units, as well as members of the general prison population, were willing to participate.

PROCEDURE

Although the procedure varied somewhat from one phase of the study to another, there were some common features. All testing and interviews took place in a room within the prison, with only the member of the research team and the prisoner being present. Standardized instructions were used for personality scales, and the interview proceeded according to a standard format. All responses were tape-recorded and later transcribed. No member of the penitentiary staff was ever permitted to stay in the room while the research was taking place, nor to overhear the proceedings. In a few cases of respondents who were considered extremely dangerous, the prisoner remained in his own cell and the interviewer stayed just outside it. Again members of the staff were asked to remain far enough away that they obviously could not overhear the conversation.

All tests and interview material were coded, and the data kept in filing cabinets at the University of British Columbia. No one outside the research team had access to the material at any time, and all identifying information was destroyed as soon as it was no longer needed.

STUDY 1

METHODOLOGY

Subjects were 12 male inmates interviewed by a female researcher at one American and two Canadian institutions. All respondents had served time in SC in a total of eight units. Their
ages ranged from 23 to 40 years; education from 10th grade to first-year university; socioeconomic class from lower class to "well-to-do." Previous prison sentences varied from none to four, and the current sentence ranged from 18 months to life. Their experience in penal institutions, including the current sentence, ranged from 6 months to 15 years, with an average of 7.7 years.

The total amount of time that they had spent in SC-type conditions ranged from 5 days to 42 months, with the longest stay at any one time ranging from 5 days to 20 months. The reasons for having been sent into SC included breaking rules, participating in sit-down strikes, inciting riots, assaulting staff, possession of weapons, fighting and threatening, and protective custody.

The semistructured interview consisted of a set of questions concerned with information relating to physical and psychological reactions to SC. Specific questions were asked about behavior in prison; attitudes toward authority, friends, and family; adaptation to life in prison, particularly how one coped while in solitary; changes in intellectual functioning, that is, memory, mental organization, and learning ability. In addition, attitudes toward segregation were solicited during the interview, as well as a description of the physical and psychological environment of prison and SC.

RESULTS

As this was primarily a pilot study, only qualitative data were gathered and were summarized in the form of frequency tables. The information was based on the subjects' own reports and has not been confirmed in any other way. Table 1 shows some of the more common responses given by the twelve subjects concerning their reactions when they were first put into SC, during the course of adaptation to the environment, and after return to the general prison population.

Additional questions related to how the prisoners coped with monotony during the SC experience. Most reported that they felt bored at some time, although one indicated that the SC situation was considerably less boring than the regular prison setting. The boredom was somewhat allayed by distortion of the sense of time,
<table>
<thead>
<tr>
<th>General</th>
<th>General Prison Setting (Pre-SC)</th>
<th>Immediate Reaction</th>
<th>During Course of SC</th>
<th>Post-SC</th>
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<tbody>
<tr>
<td>No major problems</td>
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<td>in adjusting</td>
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<td>Difficult to adapt</td>
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<td><strong>Emotional</strong></td>
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<td>Fear, worry</td>
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<td>6</td>
<td>3</td>
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<td>Anger, bitterness</td>
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<td>5</td>
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<tr>
<td>Apathy, Depression</td>
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<td>3</td>
<td>9</td>
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<td>Resignation</td>
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<tr>
<td>Boredom</td>
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<td>Loneliness</td>
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<tr>
<td>Religious feelings</td>
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<td>3</td>
<td>-</td>
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<tr>
<td>Comfort, relaxation</td>
<td>-</td>
<td>-</td>
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<td>1</td>
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<tr>
<td><strong>Intellectual</strong></td>
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<tr>
<td>Distorted or impaired</td>
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<td>5</td>
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<tr>
<td>thought</td>
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<td>Improved thought,</td>
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<td>problem-solving</td>
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<td>Impaired memory</td>
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<td>3</td>
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<tr>
<td>Fantasy</td>
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<td>9</td>
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<td>Imagination</td>
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<td><strong>Physical Condition</strong></td>
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<td>Deterioration</td>
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<td>Visual problems</td>
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<td>6</td>
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<tr>
<td>Sleep disturbances</td>
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<td>4</td>
<td>5</td>
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<tr>
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<td>4</td>
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<td>More sleep than usual</td>
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<tr>
<td><strong>Time Sense</strong></td>
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<tr>
<td>Time went slowly</td>
<td>8</td>
<td>4</td>
<td>8</td>
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<td>Time went quickly</td>
<td>1</td>
<td>-</td>
<td>2</td>
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<td>Distortion of time sense</td>
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<td>6</td>
<td>6</td>
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<tr>
<td><strong>Social Attitudes</strong></td>
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<td>Withdrawal</td>
<td>6</td>
<td>5</td>
<td>-</td>
<td>1</td>
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<tr>
<td>Greater involvement</td>
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<td>-</td>
<td>6</td>
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<tr>
<td>Aggression</td>
<td>3</td>
<td>2</td>
<td>-</td>
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<tr>
<td><strong>Activities</strong></td>
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<tr>
<td>Reading, hobbies</td>
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<td>9</td>
<td>9</td>
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<tr>
<td>Physical exercise</td>
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<td>Work assignment</td>
<td>10</td>
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<tr>
<td>Self-improvement</td>
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<td>-</td>
<td>8</td>
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with the days running into each other, although the time did pass slowly. At first, several of the men dealt with boredom by pacing vigorously around their cells and also by trying to sleep more. Both of these behaviors persisted throughout the SC period; as they got used to the environment they also used reading, fantasizing, physical exercises, and meditation to handle boredom. Reading was focused on the Bible, a finding confounded by the fact that there was a relative lack of other, more general reading material.

Some of the information given in Table 1 should be looked at in more depth. For example, it appears quite interesting that only one of these men reported periodic feelings of claustrophobia. Also, the difficulty in concentrating reported by some of the men included both free-floating thought without much direction, and repetitive rumination. One of these men reported that he found such effects only when the cell was dark. The extensive fantasizing and imagery dealt primarily with sexual and aggressive themes. Many of the occurrences of particularly vivid imagery happened when the subject was deliberately refraining from eating and/or sleeping for prolonged periods. Both imagery and fantasy were reported to have been under the respondent's volitional control, so that they were not actual hallucinations or delusions. In fact, they were deliberately used as a way to cope with monotony.

The more common postrelease reactions are noted in Table 1. In addition to these, each of the following was reported by at least one subject: feeling of being "high," reduced physical coordination, dizziness, eye strain, sleeping disturbances, and difficulty in getting back into the prison routine. Positive effects reportedly included better understanding of how to reach goals, thinking more deeply about things, increased sports participation, increased seriousness, and getting along better with others. There was a general feeling that the number of negative symptoms increased with time spent in SC.

GENERAL COMMENTS

The major complaints of the prisoners did not relate to social isolation, nor to a general lack of stimulation. In fact, the most
frequent objections were about interference with normal diet, humiliation by guards, the use of physical beatings and tear gas, and the like. Lesser complaints were the lack of a wide variety of reading materials and of exercise facilities. Some of the men also indicated that they would have liked to have an occasional brief period of time out of SC to test the realism of various problem-solving approaches that they had generated while in solitary. The general feeling of the subjects was that SC as a punitive technique did not produce many lasting positive changes in behaviors or attitudes, and that as a method for controlling prisoners it is not as effective as withdrawal of privileges might be. To the extent that SC is beneficial, the respondents felt that it would be more effective if restricted to relatively brief periods of time.

One of the reported problems with SC for the prisoner about to experience it for the first time is the negative expectations with which he has been indoctrinated. This is similar to the general negative orientation of people experiencing isolation either accidentally or experimentally (Suedfeld, 1969, 1980). The adverse effects deriving from this kind of self-fulfilling prophecy can probably be reduced if not eliminated by appropriate orientation. Prisoners felt that if SC were to be used as a rehabilitative technique, some of the physical and procedural details would need to be improved. These include the characteristics of the SC cell, such as lighting, temperature, and furnishings; the availability of reading, writing, and hobby materials; opportunities to engage in study and work in SC; and less punitive and aggressive behaviors on the part of the staff. In addition, most of the prisoners feel that the positive effects of SC are inversely related to its duration. A judgment that is so nearly universal certainly poses a hypothesis worth testing.

STUDY 2

THE INSTITUTIONS

_Institution A_ is a medium-security prison housing approximately 850 male and 150 female offenders. The institution is
divided into three areas: maximum security (reserved for those offenders classified as dangerous by prison authorities), remand (awaiting sentencing), and a general population serving their sentences.

The SC unit at the prison varies somewhat for male and female offenders. The male inmates are confined to an area approximately 2 × 1.8 m. Each unit contains a bed and mattress. At night a blanket is given to each inmate, but is retrieved at 6 A.M. the next morning. A single, low-watt bulb is on 24 hours a day. Prisoners are responsible for cleaning their cell every day. People in SC may communicate with one another by shouting through the bars of their cell. However, communication with others is discouraged by some guards. The men are locked up for 23½ hours a day; 30 minutes per day are allowed for exercise outside the cell. Sanitary facilities are located outside the SC area, and inmates may shower every day.

Prisoners in SC receive three meals during the day, the meals being identical to that received by the general population. Inmates are given no reading material other than the Bible. While maximum time in SC is limited to 15 days, some individuals may be removed for 24 hours after serving 15 days in solitary and subsequently be returned to the SC unit for an additional 15 days.

Women are housed in SC units directly below the women inmates’ general living quarters (the female facility is physically separate from the building housing male offenders). Female offenders are generally allowed more freedom than the men, both in and out of SC. They are not required to wear regulation prison uniforms, and they are allowed to eat together in a general dining area whereas men eat their meals in their cells. The meals are reportedly of better quality in the women’s section. In SC women are allowed to bring books, paper, and pencils, and personal possessions such as perfume, makeup, shampoo, and so on. Cigarettes are officially not allowed, although most inmates have them hidden somewhere in the room. Doors are made of wood, with a small aperture allowing guards to observe the inmate when desired. At the time of the present study, considerable attention was being given to the prison’s policy of employing male guards
in the female facility. Many female prisoners find the lack of privacy disturbing, particularly in light of the fact that male guards can look in on them at any time.

Inmates were usually placed in SC as a punitive measure or, in some cases, for protection from other inmates. In a few situations someone is placed in solitary when it is believed that the individual is potentially self-destructive or a danger to the other inmates.

_Institution B_ is a maximum-security federal prison. The prison currently houses approximately 550 inmates. A substantial portion of the general inmate population is housed in separate dorm-type quarters; as a protective measure, separate work and living areas are provided for sexual offenders. The general routine does not differ significantly from that of Institution A, although an effort is made to see that all prisoners are employed in some type of work or handicraft.

At Institution B solitary confinement is divided into three hierarchical levels:

**Level 1:** This is the most severe level of segregation. No communication with others is permitted, nor are any reading materials offered (a Bible may be available; however, most inmates stated that it is used primarily as a pillow). The door to the cell is made of solid steel with a small aperture. The cell contains a toilet, a mattress, and a light fixture which is on 24 hours but may be dimmed at night. Inmates receive three meals a day. Thirty minutes exercise outside the cell is provided every day. Maximum time in Level 1 is 30 days.

**Level 2:** At Level 2 inmates experience a mild form of solitary and can have reading materials, radio, and watch TV from their cells (the doors have steel bars). Some communication is possible with fellow inmates, either by shouting down the corridor or by talking through an open pipe (i.e., the toilet). The room is furnished with a bed, desk, and toilet. In other respects, Level 2 is similar to Level 1. However, inmates may be housed in Level 2 for an indefinite period of time.

**Level 3:** Same as Level 2, with the exception that inmates may be out of their cell during the day. There is a gradual release to the general population or to the protective custody (sex offender) group.
In some of the data analyses, Institution B-experienced subjects are categorized as having had severe (Level 1) or mild (Levels 2 and 3) SC.

Institution C is a maximum-security institution run by the federal government. It occupies a large building in the downtown area of a medium-sized city. Approximately 65% of the inmates are citizens of a foreign country, whose primary language and cultural background are alien to the majority of the country in which they are incarcerated. Of the remaining 35%, a substantial proportion share this foreign ethnic background. As a result, conditions in this institution are quite different from those of the others we studied: a concerted attempt is made by the administration to accommodate procedures, diet, and other aspects of daily life to the major ethnic and cultural groups among the convicts.

Environmentally, this is perhaps the most pleasant institution in the study. Educational, recreational, and cultural facilities and programs are widely available and conveniently located.

Similarly, the SC unit appeared to be relatively pleasant. There is only one kind of SC condition, which would be rated as mild. Although SC in this institution is primarily punitive, the normal duration of confinement is only two to three days. The diet is the same as for the rest of the prison, and there are no complaints about the food being cold. The inmates can also have coffee when they wish. Cells have solid doors with a small barred window. There is a television set that is on constantly in the hallway and inmates can go to the window of their cell to watch at any time. The cells contain a regular bed and a table. A selection of reading material, cigarettes, and writing paper is available, but no recreational or hobby material. The solitary confinement unit, like the rest of the prison, is completely carpeted. Daily showers and baths can be taken. There is one hour of indoor exercise per day outside the cells (because of the urban location of the prison, none of the inmates gets outdoor exercise).

Table 2 shows the distribution of demographic and background variables across the three samples. One major difference among
### TABLE 2
Demographic and Background Variables, Study 2 (Frequencies)

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<thead>
<tr>
<th>Demographic Variable</th>
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<th>Control</th>
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<th>Control</th>
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### TABLE 2 (Continued)

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<th>Institution B</th>
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<td>Murder/ attempted murder</td>
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<td>Break &amp; enter</td>
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<td>9</td>
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<td>Assault/ attempted assault</td>
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</tr>
<tr>
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<td>-</td>
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<tr>
<td>Robbery/ attempted robbery</td>
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<td>Possession of stolen property</td>
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<tr>
<td>Being/smuggling an illegal alien</td>
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<td>Other</td>
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<tr>
<td>Length of Sentence</td>
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<tr>
<td>1-6 months</td>
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<td>4</td>
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<td>7-11 months</td>
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<td>-</td>
</tr>
<tr>
<td>1 year</td>
<td>1</td>
<td>4</td>
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<tr>
<td>1-3 years</td>
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<td>4-6 years</td>
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<td>7-12 years</td>
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<td>Life</td>
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<td>Reward</td>
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</tr>
<tr>
<td>Total Time Spent in Prison to Date</td>
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<tr>
<td>1-3 months</td>
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<td>4-6 months</td>
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<td>7-11 months</td>
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<td>1-2 years</td>
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<td>3-4 years</td>
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<td>5-10 years</td>
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<td>More than 10 years</td>
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the three groups was that of age, with means of 23, 31, and 27 years for Institutions A, B, and C respectively. There appeared to be no other striking differences in demographic variables either across institutions or between the Experienced and Control participants, and we did not find a significant correlation between the demographic variables and any of the other measures. Table 3 presents information concerning SC experience.

PARTICIPANTS

In Institution A 20 male and 23 female offenders participated in Study 2. The male experienced group consisted of 15 subjects who had experienced SC at this or another institution, while the control group consisted of 5 men who had never been in SC. The female group consisted of 11 experienced and 12 control subjects. Institution B participants were all male, and included 29 experienced and 6 control subjects. In Institution C, all of the participants were male; the group was made up of 16 experienced and 9 control subjects.

ASSESSMENT BATTERY

The paper and pencil instruments used in the present study were as follows:

(1) The California Psychological Inventory (CPI) (Gough, 1975), consisting of 18 scales from which scores can be derived for such characteristics as maturity, masculinity, self-control, dependability, and the like (descriptions of each scale in this paper are excerpted from Gough’s manual);

(2) The Multiple Affect Adjective Checklist (MAACL) (Zuckerman & Lubin, 1965), which gives separate scores for feelings of anxiety, depression, and hostility;

(3) The Quick Test (Ammons & Ammons, 1962), a measure of intelligence;

(4) A version of the Alternate Uses Test (Wilson, Christensen, Merrifield, & Guilford, 1960; Torrance, 1966, a, b), a measure of creativity. Subjects were asked to list unique uses for a junked automobile.
Measures of reactions to SC were (1) The Solitary Confinement Questionnaire (Deaton et al., 1977), originally developed for use with American POWs returning from Vietnam, identifies and evaluates methods that the prisoner uses to cope with isolation; (2) The Subjective Stress Scale (Berkun, Bialek, Kern, & Yagi, 1962), which indicates the degree of stress experienced in a given situation.

In addition to the above measures, a tape-recorded, semistructured interview was conducted with each inmate. The interview consisted of questions relating to various demographic characteristics of the subject (i.e., age, education, occupation, religion, etc.) as well as the nature of his or her offense (type of crime, length of sentence). If the subject had SC experience, information was gathered relating to the duration and number of times in SC, reasons for being placed there, adaptation, attitudes, physical and psychological effects, and any behavioral or psychological changes that occurred as a result of segregation. Control subjects were asked similar questions regarding prison life in general, including methods of adaptation, behavioral or psychological changes over time, mental deterioration, and so on.
PROCEDURE

The procedure was as described for Study 1. The personality questionnaires were administered at the completion of the interview (approximately one hour). The exact number of tests administered depended upon individual (fatigue, willingness to continue) and situational factors. Interruptions were quite common and occurred during mealtimes, head counts, visiting periods, and a multitude of unexpected circumstances. Accordingly, n’s and degrees of freedom may vary with changes in the number of individuals completing a particular instrument.

RESULTS

Characteristics of the Sample

Because of the high proportion of inmates in Institution C whose native language was not English, and for whom many of the scale items had to be translated, this group was omitted from comparisons between the prisoner samples and the standardization groups on the paper and pencil measures used. General differences between the Institution A and B samples and standardization groups included the following:

(1) The prisoners’ overall mean on the California Psychological Inventory was significantly lower than the mean standard score, $T^2 = 613$, $F = 15.38$, $p < .001$. Multiple comparisons indicated that the prisoners had significantly lower scores than the norm of 50 on the scales for responsibility ($M = 26.7$), socialization ($M = 27.2$), and achievement via conformance ($M = 32.8$), all $p < .05$. In addition, the sample from Institution A was also significantly below the norm on self-control. A comparison of the Institution A female sample indicated that prisoners were significantly different from the standard mean on a group of scales that indicates higher levels of immaturity, lack of self-control, impulsivity, opinionation, resentment, aggression, and self-centeredness ($p < .001$).

(2) On the Multiple Affect Adjective Checklist, the mean scores of the standardization group were significantly below those of the
prisoner sample on all three scales. The means were as follows: on anxiety, 5.8 versus 10.8; on depression, 10.0 versus 20.65; on hostility, 6.3 versus 12.6. All of these differences were statistically significant.

(3) On the Quick Test, the Institution A sample scored significantly lower than the norm of 100, with female \( M = 89.8 \) and the male \( M = 86.0 \). Both of these deviations from the norm were significant at \( p < .001 \). The mean IQ of the Institution B and C samples did not differ significantly from the norm.

(4) On the Alternate Uses Test, all of the prisoner samples had means under 5, which placed them in the low-creative category in comparison with the standardization group.

ENVIRONMENTAL EFFECTS

There were no overall differences between the experienced and the control groups on any of the measures. On a discriminant function analysis including the four personality measures, the institutional variable accounted for 78% of the variance. The following general statements can be made:

(1) The Institution A population scored lowest on most of the CPI scales, with Institution C scoring highest;

(2) Institution A scored lowest on IQ;

(3) Institution B inmates scored highest on the three scales of the MAACL (anxiety, depression, and hostility);

(4) Institution B inmates also scored highest on the Subjective Stress Scale, with Institution A subjects scoring lowest.

There were trends for the control groups to score lower on about two-thirds of the 18 CPI scales. Of the six scales where the experienced group had lower scores, five were related to socialization, responsibility, and intrapersonal values. Control subjects had nonsignificantly lower mean scores on the three MAACL scales, on the Quick Test, and on the Subjective Stress Scale.

There was a significant negative correlation between the longest time a person spent in SC and the achievement via independence scale \((r = - .52, p = .05)\), indicating that prisoners
who had more SC time were inhibited, anxious, cautious, dissatisfied, dull, submissive to authority, and lacking in self-insight.

Correlations showed that inmates who had spent longer periods of time in segregation scored higher on depression (r = .35, p = .005) and hostility (r = .47, p = .001). Finally, there was a significant correlation between length of the current sentence and hostility measured by the MAACL (r = .31, p = .01).

INSTITUTIONAL DATA

Because of the differences among institutions, it seemed appropriate to look at differences between the experienced and control inmates within institutions. These comparisons are described below.

Institution A

None of the Hotelling's T^2 analyses showed significant differences between the CPI scores of experienced and control subjects, either within the male or the female group. In the female sample, however, there was a trend (p < .09) on a category of scales indicating that experienced subjects were more awkward, cautious, apathetic, self-defensive, and restricted in thought and action.

There were no significant differences between the experienced and control groups of the Institution A sample (either male or female) on the MAACL scales, the Quick Test, or the Alternate Uses Test. There was a significant multiple correlation between the combined MAACL scales and the number of times that an experienced person had been sentenced to SC (R = .57, p < .05), explained mostly by a strong inverse relationship between number of times in SC and hostility. Among the women the multiple correlation between CPI scales and number of times in solitary (R = .87, p < .01) and between the CPI and the total amount of time spent in SC (R = .94, p < .01) were significant. However, because of the small sample size and the large number of predictors, these data may not be very meaningful. Closer
examination of the relationship indicates that having been in SC more times is associated with scales indicating immaturity, impulsivity, and lack of control. Total length of SC is associated with anxiety, restlessness, dissatisfaction, hard-headedness, manipulativeness, and opportunistic behavior.

**Institution B**

Although there were no significant differences between the experienced and control groups on any of the CPI scales, the total sample was significantly lower than the standard mean of 50 on responsibility (M = 26.7), socialization (M = 27.2), and achievement via conformance (M = 32.8), all p < .05. These patterns characterize an undercontrolled, defensive, demanding, resentful, rebellious, insecure, and opinionated individual.

None of the MAACL scales showed differences either between the experienced and control groups or between the mild and severe isolation groups. There were also no differences on IQ or Alternate Uses. None of the correlations between prison or SC experience and the personality measures reached statistical significance.

In another set of analyses, the data from Institution A males and the Institution B sample were combined. A significant multiple correlation between CPI scales and the total length of time in SC (R = .50, p < .05) showed a negative weighting for the tolerance scale and positive weightings for the scales for capacity for status and communality. In other words, longer time in SC was associated with suspicion, distrust, and forceful and self-seeking behavior. There was also a significant relationship between the total length of time in SC and the MAACL (R = .40, p < .01), longer time in SC being associated with higher levels of hostility.

**Institution C**

There was a significant difference between the experienced and control groups on the good impression scale, M = 37.6 versus 45.3, t (19) = 2.12, p < .05. The responses of the experienced
group were similar to those of subjects who are asked to fake a socially undesirable set of responses, exhibiting a personality that could be described as inhibited, shrewd, aloof, resentful, self-centered, and unconcerned with the needs of others. Experienced subjects also showed more hostility on the MAACL, M = 11.13 versus 6.86, t (21) = 2.16, p < .05. There were no significant differences between the two groups on IQ or the Alternate Uses Test.

There were significant correlations between the number of times an inmate had experienced SC and his score on the CPI scales capacity for status (r = -.56, p < .05), communality (r = -.79, p < .001), and socialization (r = -.55, p < .05). Participants who had been sentenced to SC more times showed themselves on the CPI to be low in social maturity, integrity, and rectitude, in those qualities that lead to high status, and in their correspondence to the modal responses on the inventory.

REACTIONS TO SOLITARY CONFINEMENT

Interview Results

Once again, there was no evidence to support the hypothesis that SC is universally or uniformly aversive or damaging to inmates. Several of the prisoners indicated that when they had first gone into SC they were afraid that serious mental or physical deterioration would occur, but in general this expectation was not borne out. Similarly, fears of being unable to adjust to the situation were unjustified. The first 72 hours were quite difficult for many prisoners, but the adjustment after that made SC quite tolerable. At the same time, inmates indicated that the first few days were frequently devoted in at least some part to analyzing and reflecting upon their past and future behaviors in an environment that did not have the noise and distraction that was usually encountered in the normal prison environment. Some actually reported that they welcomed, and had sought, a period in SC in order to “get their heads together.”

The major complaints about SC tended to revolve around such issues as the humiliating or rough treatment received from certain
guards, missing educational, recreational, or vocational experiences, the lower quality of the food, and so on. Complaints against younger guards were more frequent compared with older, more experienced security personnel, who were generally perceived as being easier to get along with and more reliable in their behavior patterns. Very few respondents indicated that there was any problem as a result of social isolation or reduction of sensory input. Some prisoners complained that after being released from SC they felt unusually shy or “spaced out” for a few days, and that they would have preferred having some sort of gradual reintegration into the population.

The interviewers reported that many of the respondents spoke about their SC time and their adjustment to the situation with some pride, and indicated that having been sent into SC and then dealing with it successfully would add to their status among the other inmates. Also, in spite of the fact that there were very few reliable test score differences between our experienced and control respondents, the interviewers felt that the SC group appeared more outgoing, argumentative, opinionated, and personable. The experienced prisoners in Institution B were reported to be particularly intelligent and articulate, and also to be somewhat manipulative in dealing with the research team. This may have been due to their greater age and longer experience in prison settings. One interesting finding in Institution B was that individuals in severe SC indicated lower stress and less hostility during the interview than those in the more moderate SC conditions. This may have been due to the fact that the latter were placed in SC for an indefinite time period, which may both make the situation more unpleasant and detract from the inmate’s ability to test the validity of some of the insights and problem-solving approaches that he develops during the isolation period.

With increasing time in SC, many prisoners report growing apathy and detachment from the pressures of the situation. The general attitudes toward SC did not differ significantly across institutions. In Institution A, 4 respondents were positive, 16 negative, and 5 indifferent or noncommittal; in Institution B, the equivalent figures were 2, 19, and 8; and in Institution C, 5, 6, and
4. It is quite probable that these differences are a function of the type of inmate in each institution and the conditions of SC, as well as of the conditions and duration of segregation.

**Subjective Stress Scale**

Use of the Subjective Stress Scale demonstrates the inadequacy of relying solely upon interview or other self-report data from prisoners in dissociation without a comparison group. Contrary to expectations, there were no significant differences in subjective stress in any of the three institutions between experienced prisoners rating their reaction to SC and control prisoners rating their reaction to the general prison environment. The former ratings had medians around the scale item labeled “nervous” or “worried”; the latter were around “unsteady” and “nervous.” Contrary to common opinion, but not to our interview data, there were no significant correlations between SSS scores and either the number of times or the total amount of time a prisoner had been in SC.

**Solitary Confinement Questionnaire**

The most useful time-passing devices as rated by the experienced subjects were (in decreasing order) sleep, thinking about the future, physical exercise, and health and hygiene activities. Such time-filling behaviors as inventing things, humor, reliving the past, and other memory and cognitive activities were rated medium. The least useful time-passers were talking to oneself, suicidal thoughts, and self-pity.

Health and hygiene activities, thoughts about food, and worry about family all appeared between the first and second days of solitary confinement. Thinking about the past and future occurred between the second and third day. The last activities to occur were talking to oneself, resisting guards, and suicidal thoughts. On the average the first two appeared towards the end of the first week of solitary confinement and the last well into the second week.
There seemed to be no significant meaningful differences across institutions on these variables, except that female prisoners (Institution A) reported such activities as identifying sounds, fantasizing/daydreaming, and recalling books and movies to be more useful, and thinking about sex and masturbating less useful, than the male sample. They also reported the first appearance of many coping behaviors much earlier than the men. Particularly high differences were found on humor (3 days versus 10), religious activities (2 versus 8), playing games on guards (3 versus 8), identifying sounds (2 versus 8), recalling books and movies (3 versus 7), and thinking about food (2 versus 6).

To test whether intelligence moderated the prisoner’s reactions to SC, we calculated correlations between the Quick Test and other measures. Overall, neither the SSS nor any of the MAACL scales was significantly correlated with IQ, although in Institution B more intelligent respondents were lower in MAACL anxiety (r = −.41, p < .01).

The SCQ showed that more intelligent prisoners found thinking about the future and mental exercises more useful, and sleeping less so, than did subjects of lower IQ (r = .23, .30, and −.24, respectively, all p < .05). They also began to use thinking about the future (r = −.21) and mental exercise earlier (r = −.30), and physical exercise (r = .35), staring (r = .29), plans for escape (r = .23), and feelings of guilt (r = .23) later in the SC session (all p < .05). In addition to these relationships several significant correlations were found between IQ and other measures in specific institutions.

**DISCUSSION**

The results of this study indicate that the average scores of the prisoners in the sample differed from the normative groups on a variety of personality scales, in general showing the prisoners to be lower on scales related to socialization and conformity. The
female convicts were more impulsive, immature, and uncontrolled than the norm. The incarcerated subjects also had low scores on the Alternate Uses Test, but showed elevated levels of anxiety, depression, and hostility.

There were no consistent significant differences between convicts who had experienced solitary confinement and those who had not, but there were such differences in some of the institutions. Generally, the experienced subjects were relatively low on measures related to socialization and responsibility, and higher on negative affect scales of mood, on subjective stress in their environment, and on intelligence. Increased time or increased number of times in SC were associated with inhibition, anxiety, lack of self-insight, submissiveness, depression, and hostility. People who had spent more time in SC were also more likely to be suspicious, distrustful, self-centered, and socially immature. The subjective reports of the interviewers supported the view that subjects with more SC experience tended to be manipulative, forceful, and self-centered.

Adjustment to SC seemed to have been reached by most of the experienced respondents within the first few days of their initial experience in that environment. On the interview, most of them did not report that the situation was extremely stressful or unpleasant, and what unpleasantness there was seemed to center around complaints of mistreatment by guards and a lack of amenities rather than around social or sensory deprivation. While stress and hostility were generally higher in ratings of SC than in ratings of the general prison milieu, this was by no means a consistent finding and in fact several reversals occurred. More intelligent subjects adapted to SC somewhat differently, but on the whole found it neither more nor less tolerable.

In this study, unlike in most of the literature, the respondents were essentially average convicts, and they had been exposed to standard SC conditions rather than to specially designed experimental situations. They had spent varying amounts of time in SC, ranging from a few days to many months, and on the whole probably constituted a much more representative sample of
convicts who had spent time in SC than those whose reactions had been published previously. Our data lend no support to the claim that solitary confinement, at least as practiced in this sample of North American prisons, is overwhelmingly aversive, stressful, or damaging to the inmates.

The study has some shortcomings that make its conclusions less than definitive. First of all, although no major psychological damage was found or claimed among our SC groups, it is possible that a pre- and post-SC comparison would have identified such occurrences. Second, we have not collected data in all possible kinds of institutions. Third, we have used a relatively small number of tests, and it is possible that more measures or a different selection of measures would have yielded different results. The factors that are addressed by the instruments we used were those that had previously been implicated as being affected by SC; still, these were not the only possible indices or factors. It should be noted, incidentally, that there was no implication as to the reasons for differences found between prisoner groups and the standardization samples. It may be that these responses reflect the effects of incarceration and/or an interactive relationship between the prison environment and the respondents' personality or temperament (see Reppucci & Clingenpeel, 1978).

Another possible problem is that the sample is truncated. Individuals who were completely unable to adapt to SC and became psychotic or committed suicide were obviously not included. The extent to which such reactions occur is a matter of some controversy. Some self-injurious and other abnormal behavior in SC may be a device to attract attention, to be given a change of routine, or to exert power over the administration and staff of the institution. Other such occurrences are perfectly genuine symptoms of inability to tolerate segregation. Still others may reflect pathological or other characteristics of prisoners completely unrelated to SC. At the moment, there are no acceptable data relating to these issues, or in fact even to the frequency of such events. But it is again probable that prisoners in our sample are much more representative of the general convict
population than are the individuals whose responses are extreme to the point of self-destruction, so that the generalizability of our results may not be seriously affected.

On the whole, this first attempt at an empirical evaluation of the effects of SC indicates that the situation is tolerable and in some cases may even be perceived as beneficial, although it clearly has unpleasant features. Prisoners who have been in SC show no deterioration in personality or intellect. Personality differences between them and control prisoners are few, and those that were found probably distinguish individuals who are more likely to violate institutional rules and be sent to SC rather than showing the effects of SC.

Our results completely contradict the idea that solitary confinement as practiced in prisons such as those included in this sample is equivalent or even close to either experimental sensory deprivation or the total solitude and stimulus reduction reported by individuals confined as POWs, spies, or political prisoners in some foreign countries (e.g., Burney, 1961; Bone, 1957; Grey, 1970; Lewis, 1974). With relatively few exceptions and temporary interruptions, SC units in fact provide considerable sensory input and social contact. The suggestion that all or even most SC inmates develop emotional disturbances of a pathological level (e.g., Cormier & Williams, 1966) likewise fails to match our data. Certainly the claims of some zealous critics that “solitary confinement is a form of torture” (Lucas, 1976, p. 153), “psychological torture” (Thoenig, 1972, p. 237) or “inhuman” (Singer, 1971, p. 1296) are not confirmed either by objective tests or by the reports of the prisoners themselves.

Obviously, this is not to deny that there may be institutions in which solitary confinement units impose excessive degrees of stimulus, social, and response restriction, where guards may be brutal, the food inadequate or unappetizing, the temperature not kept within acceptable bounds, sanitation facilities not maintained or made available properly, and so on. Such abuses have been well documented, and clearly should not be tolerated. However, the generalization from such situations to the ordinary SC unit in the average North American prison is unwarranted,
and claims as to the deleterious effects of the more common SC experience seem unjustified on the basis of all of the objective data that are now available. At the same time, it is clear that improvements could be made in the way that SC is imposed and administered, and of course these data do not address themselves in any way to the desirability of continuing SC as a punitive technique in institutions.

As was mentioned earlier, there is a rather extensive autobiographical, anecdotal, and clinical literature indicating that many prisoners find long periods of SC intolerable, and that for some inmates even short periods of relatively mild SC may be very stressful. It should be clear that our data do not in any way contradict this literature, and that we do not deny its validity. Obviously, the inability to adapt to SC differs from individual to individual, as does the ability to adapt to any environment. One might hypothesize that certain personality characteristics may seriously reduce tolerance for SC, while other characteristics may enhance it. Among the individuals for whom the situation is highly aversive, there may be some who cannot find a way to cope, and who provide the illustrations of suicide or psychosis; others who are articulate, creative, and assertive, and who initiate litigations and produce the moving autobiographies, stories, and poems; and still others who are physically reckless, adventurous, and aggressive, and who end up organizing hostage incidents, escapes, and uprisings. In each of these instances it is the interaction between personality and environment that determines the final outcome, rather than environmental factors by themselves. There is no doubt that the damage that may be caused by some SC-personality interactions should be minimized. We would strongly recommend that attempts be made to assess prisoners' ability to adapt to SC, and that close and objective monitoring and release procedures be set up to identify and transfer individuals for whom the experience may be damaging. However, our data do indicate that this should be done on a case-by-case basis. Legal or scientific claims of deterioration, damage, or cruelty should be based on specific and objectively identifiable events, not on personal revulsion, unsupportable generalizations, or far-fetched arguments by analogy.
NOTES

1. Some North American penitentiary inmates have recently begun to claim that they should be regarded as political prisoners. For the most part these are individuals who are incarcerated in the first instance for common felonies and who at some later time come to attribute their crimes to political motives. While this attribution should not necessarily be dismissed, neither can it be accepted at face value. In any event, the proportion of such prisoners in the institutions used in this study was very low, and none of the participants in our research identified himself as being a member of this group.

2. The data from this study were summarized in Suedfeld, P., Ramirez, C., Clyne, D., & Deaton, J. (1976).

REFERENCES


Peter Suedfeld is Professor and Head, Department of Psychology, University of British Columbia, and was formerly at Rutgers. Much of his experimental and field research has focused on the effects and uses of low-stimulation environments.

Carmenza Ramirez, who received her M.A. from the University of British Columbia, is now Lecturer in Psychology at Universidad de los Andes in Bogota, Colombia. She is also the Director of a new smoking-cessation clinic which uses Restricted Environmental Stimulation Therapy in conjunction with other intervention techniques.

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