Exhibit P-33

Opinion of George Cooper, Q.C., Regarding Canadian Government Funding of the Allan Memorial Institute in the 1950's and 1960's

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February 26, 1986

The Honourable John Crosbie, P.C. M.P.
Minister of Justice and
Attorney General of Canada
Ottawa, Ontario
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Dear Mr. Crosbie:

You have asked for my opinion on certain matters related to activities carried on at the Allan Memorial Institute ("AMI") in Montreal during the 1950's and 1960's by Dr. D. Ewen Cameron and others, and in particular as to whether in the funding of these activities the Government of Canada did anything or omitted to do anything which might be found to be illegal or improper if an action were brought or a complaint made by one or more former patients at the AMI.

In December, 1980, nine former patients at the AMI brought action against the U.S. Government, claiming damages for injuries suffered by them while under the charge of the AMI and particularly Dr. Cameron. They allege that the Central Intelligence Agency (CIA) funded Dr. Cameron to perform psychiatric "experiments" on them without their consent, resulting in permanent injury. The specific techniques or procedures alleged are massive electro-shocks, psychic driving, drug-induced sleep and the use of controversial chemicals such as lysergic acid diethylamide (LSD). These allegations form the backdrop of publicity and public concern against which my review of the facts underlying this opinion has taken place. The Second Amended Complaint of the nine plaintiffs is attached as Appendix 1. A letter from the plaintiffs' attorney plus enclosures, which sets out the basis of this claim, is attached at Appendix 1A.

As a result of discussions with J.C. Tait, Q.C., Assistant Deputy Minister, Public Law, and M.L. Jewett, Q.C., General Counsel, Constitutional and International Law, I understand you are seeking both an opinion as to the government's potential legal liability, and also an opinion as to whether the government may be under some duty towards the patients of a kind which falls short of legal liability; and, if so, what kind of response might be made by the government to discharge such moral responsibility. This opinion addresses both issues.

My plan will be to address the following points:

(1) the steps I have taken to learn the facts;

(2) conclusions as to what psychiatric procedures were actually used at the AMI under Dr. Cameron and his associates;

(3) the involvement of agencies or departments of the Federal Government in funding the AMI;

(4) the climate of the times during which the work of Dr. Cameron and his associates was carried out;

(5) the personality, character and professional activities of Dr. Cameron, and an assessment of the quality of his work;

(6) a discussion of the ethical considerations surrounding the nature and quality of scientific and medical research and experimentation in the 1950's and early 1960's, both generally and in relation to Dr. Cameron's work, and a comparison with today's standards;

(7) the involvement of the Central Intelligence Agency (CIA);

(8) a discussion of the lawsuits conducted in the Quebec Superior Court in connection with this matter (Orlikow v. The Royal Victoria Hospital and Morrow v. The Royal Victoria Hospital);

(9) a discussion of the legal principles which apply to this case, and conclusions of law;

(10) a discussion of the wider responsibility of the government;

(11) final conclusions.

I have been assisted throughout by Louis B.Z. Davis of the Constitutional and International Law Section of the Department and by Mr. Ron Louisseize, Legal Assistant in the Civil Litigation Section, as well as by members of my firm. The help of all these people has been invaluable. I have also been assisted by Dr. G.L. Nelms, Associate Chief, Research and Development, Department of National Defence; by Dr. Ron Heacock, Director General, Extra-Mural Research Programs Directorate, Health Services and Protection Branch, Department of Health & Welfare; and by Mr. Brian Dickson, Director, Legal Advisory Division, Bureau of Legal Affairs, Department of External Affairs, together with others in each of those Departments. In

particular, I have met with J.H. Taylor, Under-Secretary of State for External Affairs; D.B. Dewar, Deputy Minister of the Department of National Defence; and David Kirkwood, Deputy Minister of the Department of Health and Welfare. From all of these individuals I have received the fullest cooperation.

1. PROCESS: STEPS TAKEN TO LEARN THE FACTS (INTERVIEWS, REVIEW OF FILES, ETC.)

A. Preliminary

A preliminary word on the scope of my inquiries is in order.

In your letter of July 26, 1985 and in Mr. Jewett's letter of July 29, 1985 your instructions made no specific reference to Dr. Cameron. In this opinion I have, however, concentrated on Dr. Cameron for a number of reasons.

First, he was the head of the AMI at all relevant times, and its driving force. It was he more than anyone else who developed the psychiatric procedures now in controversy, and he was clearly the leader in their application to patients.

Second, in the actions of the nine U.S. plaintiffs, two of whom also brought action in Quebec (Mrs. Velma Orlikow and Dr. Mary Morrow), Dr. Cameron appears to be singled out as the "guilty party"; indeed in the Morrow case his estate was named as a defendant.

Third, in the course of reviewing the facts necessary for purposes of this opinion, I have seen considerable material relating to the work of Dr. Cameron's colleagues at the AMI, material that in my opinion is sufficient to give a clear picture of the psychiatric work that was carried on there. In accordance with usual academic practice, a number of colleagues - professors, residents and those from other disciplines - were often associated together in the same piece of research; usually the names of two or more would appear as contributors to the published results. Thus, although I have not made special inquiries about, or searched for all file material held by government departments or by the Public Archives on, each of Dr. Cameron's associates - that task would have taken considerably more time - I have searched high and wide for information on Dr. Cameron; and in so doing, I believe I have a clear, if not an absolutely complete, picture of the work of his associates as well, at least in the relevant subject area.

B. Problems in digging up information 20-40 years old

The events in question began to take place at the AMI over thirty-five years ago. Three important consequences flow from this fact. First, many of the routine administrative files in the two key departments (Health & Welfare and National Defence) have been destroyed in the ordinary course, with the result that I have had to rely a great deal upon the recollection of those who were directly involved at the time. Second, some of those who were directly involved have since died, with the result that the record is necessarily incomplete in so far as it depends upon recollections. Third, many of those still living could not be of assistance on points of detail, simply because their recollections are no longer precise in view of the time that has passed since they were actively involved with the subject.

Nevertheless, I am persuaded that enough factual material has been uncovered, both in direct interviews and from the files that still exist, to allow factual conclusions to be drawn with a high degree of certainty. There is, of course, the possibility that new facts might come to light, either from government file material not yet uncovered, or from individuals now or formerly in the public service who might come forward with new information, but I

consider this possibility to be remote. Consequently, I believe I have seen and heard sufficient to conclude that all of the important facts that could now be known about this subject, and which are in the possession of the Government of Canada or any of its departments, agencies or employees (past or present), are now known and have been taken into account for purposes of this opinion; and that it is unlikely that new facts of strong probative value will later be uncovered.

C. Limitations to my mandate

This conclusion is of course subject (as is the whole of this opinion) to the important qualification that the scope of my inquiries has been limited by the terms of reference stated in both your letter of July 26, 1985 and Mr. Jewett's letter of July 29, 1985. In accordance with that mandate, and apart from consultations with the three independent experts referred to later, I have confined my interviews to people having a past or present connection with the Government. Similarly, I have confined my file search to files in the possession of the Government (except that I have also reviewed the files publicly available in the Quebec Superior Court in the case of Orlikow v. The Royal Victoria Hospital (case no. 500-05-006872-798), and in the Quebec Superior Court (case no. 500-05-738532) and in the Quebec Court of Appeal (case

no. 500-09-001247-782) in the case of Morrow v. The Royal Victoria Hospital). I have not made any inquiries of people who do not have such a connection, nor (except as noted) have I seen any files in the possession of people or institutions other than the Federal Government.

Thus, I have made no enquiries of (for example) former patients or staff at the AMI at the time when Dr. Cameron was there, and it is of course possible that new facts might come to light from that source. (As discussed fully later, I did interview Dr. Robert A. Cleghorn at length and received very valuable information from him; Dr. Cleghorn was a psychiatrist on staff at the AMI, and succeeded Dr. Cameron as Director of the Institute in 1964. I was able to speak to Dr. Cleghorn, not on the basis of his association with the AMI, but because of his association with the Defence Research Board where, for a period prior to 1961, he was Chairman of the Panel on Psychiatric Research of the Medical Advisory Committee of the Defence Research Board.) I have seen no medical records of patients at the Allan. Finally, I have not had access to material from the CIA or other U.S. sources, except as specifically referred to in this opinion.

D. General comments on the interview and file review process

Because of the fact that so much file material has been lost, I felt it important to interview former government employees and also certain people formerly associated with research advisory panels but not in the employ of the Government. I was also given complete freedom by the four Departments involved to speak to those still employed in the public service. As a result, I have personally spoken to all present and former members of the public service still living who had anything substantial to do with any of the Government research grants programs in the mental health field. In every single case, both present and retired members of the public service were willing to talk at length and without reservation to me, and I have taken extensive notes of these conversations. In no case have I detected any element of reserve or lack of cooperation. I have detected no attempt to hide or gloss over any aspect of the questions at issue, and never any attempt to mislead.

I should add that I gave assurances to those whom I interviewed that their comments would not be publicly attributed to them without their consent.

I was also given complete freedom to review all of the files still available at the Departments in question (Justice, External Affairs, Health & Welfare and Defence)

and at the Public Archives of Canada, and this includes files which appeared on the surface to be only marginally relevant and which, on closer examination, proved to yield no information of any probative value. I have completed such reviews. The Department of Veterans Affairs and the Medical Research Council also assisted by reviewing their files and I am satisfied that these bodies did not fund any projects of Dr. Cameron except for one or possibly two projects as discussed in section 3 of this opinion. I did not review any cabinet documents, and I have no reason to believe they would yield any fruitful information.

A list of those whom I interviewed is attached as Appendix 2, and a list of the files which I reviewed is attached as Appendix 3.

E. Expert opinions

I have had the benefit of expert opinions from Dr. Frédéric Grunberg, Professor of Psychiatry at the University of Montreal (and incidentally the current President of the Canadian Psychiatric Association), Dr. Ian McDonald, Dean of Medicine at the University of Saskatchewan, and Dr. Fred Lowy, Dean of Medicine at the University of Toronto. Their expert opinions and curricula vitae are attached as Appendices 4, 5, and 6 respectively.

2. PSYCHIATRIC PROCEDURES IN USE AT THE ALLAN MEMORIAL INSTITUTE FROM 1948-1964

A. General conclusion

It is clear that the techniques and procedures alleged by the nine plaintiffs in the U.S. law suit were in fact used at the AMI, and by Dr. Cameron in particular. That is to say, each of the techniques of Electro Convulsive Therapy (ECT, sometimes known as Electric Shock Therapy), including massive electric shocks ("depatterning"); sleep therapy; partial sensory isolation; psychic driving; and psychopharmacology (drugs) were used. Most important of these was the procedure called by some "Regressive Shock Therapy" (RST), and called by Dr. Cameron "depatterning", which is perhaps the most controversial of all.

In stating this conclusion, it will be appreciated that I am making no judgment as to the accuracy of any particular plaintiff's claim about the use of any one or more of these techniques in his or her case, as to the appropriateness of that technique in relation to that particular plaintiff's illness, or as to whether, in any particular case, the treatment was applied in a proper fashion. In accordance with my mandate, I did not address any of these issues. The point is simply that there is no doubt that Dr. Cameron used all of these techniques at various times, and it is certainly within the realm of

possibility that the plaintiffs received all the treatments they allege they have received.

The psychiatric treatments administered at the Allan at various times during the 1940's, 1950's and 1960's may for present purposes be divided into two categories:

(1) those in use elsewhere in Canada and the world; these included ECT (electro convulsive therapy, sometimes called electroshock therapy), insulin coma shock therapy, sleep therapy and drugs (including lysergic acid diethylamide, or LSD); and

(2) those in use at the Allan and at a few centres in some other countries (but not elsewhere in Canada); these included depatterning, psychic driving and sensory isolation.

None of the foregoing psychiatric procedures were pioneered at the Allan, and none were unique to it, though the procedures of psychic driving and depatterning were developed further and continued longer at the Allan than elsewhere. Moreover, the use in combination of the techniques of depatterning, psychic driving, sensory isolation, sleep therapy and drugs appears to be unique to the Allan.

A general discussion of the theoretical basis for these treatments follows in paragraph B., and a description of the actual procedures involved follows at paragraph C. Formal descriptions are found in articles published by Dr. Cameron in the scientific literature and attached as Appendices 7 to 17 inclusive.

B. <u>The intellectual and scientific basis for the procedures of "depatterning" and psychic driving</u>

Dr. Cameron held the view that mental illness was the consequence of the patient's having learned over the years "incorrect" ways of responding to the world around him or her.

The "brain pathways" had thus developed through repetition a set of "learned responses" that were not socially acceptable and resulted in the patient's being classified as mentally ill.

It had been observed over many years by psychiatrists that persons who were subject to convulsions of the brain did not become mentally ill. Examples are those who suffer from epileptic convulsions, and those who suffer from insulin coma. It was speculated that these naturally occurring convulsions somehow cleared the "brain pathways" and thus eliminated these "incorrect" thought processes. From these observations it was deduced that if convulsions could be applied artificially to mentally ill patients,

the "brain pathways" would be broken up and the patient's illness would be relieved. This was the fundamental idea behind ECT, insulin coma shock therapy and other therapies designed to induce convulsions.

Dr. Cameron took hold of this idea and developed it much further than psychiatrists in the mainstream of European and North American practice. His idea was to break up the brain pathways through the highly disruptive application of massive electroshocks, many times the number of shocks in a normal ECT treatment - two times a day, as opposed to three times a week, for example - until the patient's brain had been "depatterned"; i.e. (in the case of psychotic patients) until all schizophrenic symptoms were lost, as well as other aspects of memory. After this had occurred, the idea was then to "re-pattern" the brain by trying to instill new and "correct" patterns of thinking in the patient's mind.

Under Cameron's theory, one might compare the patient's brain to an old-fashioned telephone switchboard, in which all the wires were plugged into the wrong holes. In depatterning, all the wires were pulled out; in repatterning, the aim was to plug all the wires back into the right holes.

A second theoretical basis upon which these procedures rested was the idea that serious mental illness was the result of poor mothering, an idea developed in the U.K. in the 1930's and 1940's. If a child could be "re-mothered" by a procedure known as "anaclitic therapy", it could be cured of the illness. Dr. Cameron in effect applied this idea to adults. Through "depatterning", he had reduced the patient's mind to a childlike state; through re-patterning, his idea was to "remother" the patient in the protected and kindly environment of the hospital. Psychic driving was one of the techniques of remothering.

Dr. Cameron used these two procedures of depatterning and psychic driving in treating both psychotic patients (schizophrenics) and psycho-neurotic patients. It is important to note that, with respect to selection of patients in the psychoneurotic category, he said:

> "With regard to <u>selection</u>, we select primarily chronic psychoneurotic patients in whom all previous forms of therapy have failed." (Appendix 14, p. 210) (emphasis in original)
>
> "The patients selected are almost entirely those suffering from extremely long-term and intractable psychoneurotic conditions." (Appendix 18, p. 5)

C. <u>The procedures involved</u>

Following is a brief description of these treatments, in their most highly developed form and taken in combination as they sometimes were.

(1) Depatterning and prolonged sleep

In depatterning, the patient would be subjected to massive electroshock treatments - sometimes up to twenty or thirty times as intense as the "normal" course of electro convulsive therapy (ECT) treatments. At the end of up to 30 days of treatment - up to 60 treatments at the rate of two per day - the patient's mind would be more or less in a childlike and unconcerned state.

In preparation for the treatment, the patient would be put into a state of prolonged sleep for a period of about ten days, using various drugs. At that point, the massive electroshock therapy would begin, the patient being maintained on continuous sleep throughout. Somewhere between the thirtieth and sixtieth day of sleep, and after 30 to 60 electroshock treatments, depatterning would be complete. Depatterning was then maintained for about another week, with electroshocks being reduced to three per week.

Gradually the treatments were reduced to one a week. Then followed a period of reorganization, when the patient came back from the "third stage", through the "second stage", up to the "first stage" of depatterning. During this period the patient would undergo considerable anxiety; to control this, the drugs chlorpromazine (Largactil) and sodium amytal were administered.

The purpose of this procedure, in the case of psycho-neurotic patients, was to prepare them for a course of "psychic driving".

(2) Sensory isolation

An alternative method of preparing patients for psychic driving was to place them in situations of "sensory isolation". This involved depriving them of incoming sensory stimulation. This procedure grew out of work carried out in the early 1950's by Dr. Donald O. Hebb, a psychologist at McGill, on behalf of the Canadian Defence Research Board. Cameron's work with sensory isolation was not a continuation of the Hebb work (as suggested by some of the media coverage), but was intellectually connected with it. Hebb's work is discussed more fully in section 3 of this opinion.

Patients would be placed under conditions of sensory deprivation for a matter of days, in one case as long as sixteen days. In some cases, patients who underwent sensory deprivation without effect were subsequently placed under sleep and shock therapy as described above.

(3) Psychic driving

Following a course of sensory deprivation, or of sleep and shock therapy, or both, the patient would then undergo the "psychic driving" procedure. This consisted of messages played on tape recorders and repeated thousands of times to the patients by means of pillow microphones, stenographic headphones, and other methods. The idea was first of all to deliver a negative signal, designed to get the patient to confront his or her inadequacies. (For example: "Gertrude, you don't get along with people. You have never gotten along with your mother...You have always felt inadequate and have been jealous of other people"...). This lasted for a period of about ten days, after which positive messages would be given for about another 10 days. (For example: "Gertrude, you want to be free like other women. You are trying to give up manipulating people by your complaints ... You want other people to like you ...You want to have confidence.")

The content of the messages was usually determined through psychological interviews conducted with the patient before the treatment began ("autopsychic driving"), sometimes while under the influence of disinhibiting drugs. In some treatments the messages were based on material developed by the psychiatrist rather than the patient ("heteropsychic driving").

Psychic driving would take place for continuous periods of up to sixteen hours per day. Taken together, the positive and negative messages might be repeated up to half a million times.

Drugs were used throughout the procedure. Barbiturates, etc., were used during the period of prolonged sleep. As the patient emerged from depatterning, the anxiety that attended the process was relieved by heavy doses of Largactyl and sodium amytal. During the psychic driving procedure, in order to keep the patient receptive to the messages, injections of curare and beeswax would be given. LSD was sometimes also administered.

Throughout the procedure, and for a period of up to three years afterwards, a patient would receive intensive personal care, both in and out of hospital as required, from the hospital staff including social workers, psychiatrists, psychologists and nurses. Further electro-shocks were administered an average of 65 times during this three year period.

(4) Psychoneurotic and schizophrenic patients

These procedures were used in treating both psychoneurotic and schizophrenic illnesses, although the psychic driving technique appears to have been used chiefly with psychoneurotic patients. Psychic driving appears not to

have been generally used with schizophrenics, who were repatterned by hospital staff; they spent weeks bringing them back to the point where they could lead something of a normal life. Prolonged memory deficit was a particularly serious problem for both categories of patient.

(5) Procedures highly intrusive and intensive

It will be appreciated that RST, or depatterning, was a highly intensive and intrusive procedure. It was deliberately aimed at "breaking up the pathways of the brain" and thus reducing the brain to an almost infantile state. In fact, Dr. Cameron describes the three stages of depatterning as follows:

> "In the first stage of disturbance of the space-time image, there are marked memory deficits but it is possible for the individual to maintain a space-time image. In other words, he knows where he is, how long he has been there and how he got there. In the second stage, the patient has lost his space-time image, but clearly feels that there should be one. He feels anxious and concerned because he cannot tell where he is and how he got there. In the third stage, there is not only a loss of the space-time image but loss of all feeling that should be present. During this stage the patient may show a variety of other phenomena, such as loss of a second language or all knowledge of his marital status. In more advanced forms, he may be unable to walk without support, to feed himself, and he may show double incontinence. At this stage all schizophrenic symptomatology is absent. His communications are brief and rarely spontaneous, his replies to questions are in no way conditioned by recollections of the past or by anticipations of the future. He is completely

> free from all emotional disturbance save for a customary mild euphoria. He lives, as it were, in a very narrow segment of time and space. All aspects of his memorial function are severely disturbed. He cannot well record what is going on around him. He cannot retrieve data from the past. Recognition or cue memory is seriously interfered with and his retention span is extremely limited."
> (Appendix 15, p.67).(emphasis added)

Other psychiatrists, whose work in RST preceded Dr. Cameron's and formed the basis for the work at the Allan, described the state of the patient's mind after RST in these words (taken from the same article at p. 66):

> "Kennedy and Ancell described their patients as being brought to the level of 4-year-old children. Rothschild and his co-workers referred to certain of their organically disorganized patients as being unable to swallow but able to suck fluid from a feeding bottle. Glueck reported that his patients were like helpless infants. They were incontinent in bladder and bowel and required spoon feeding as well as tube feeding."

It will be appreciated that these graphic descriptions of the effects of massive electroshock therapy appeared in articles published in the open scientific literature.

D. <u>The problem of loss of memory</u>

It is well recognized by psychiatrists that simple ECT causes in many patients the undesired side effect of "memory deficit". For example, a patient after undergoing one treatment (a convulsion for perhaps one minute, followed by a half hour or hour of sleep) might temporarily

forget how to put on and tie shoes. However, after one treatment, memory loss is transitory only. After a normal course of ECT - say twelve treatments over two or three weeks - memory might be lost for a couple of weeks or so; on rare occasions, longer. Hospital personnel are, of course, trained to help patients put their shoes on, etc., in the interval during which the memory is recovering.

After depatterning, prolonged memory loss was not at all unusual, simply because of the massive nature of the electroshock applied. All schizophrenic symptoms would be lost, as well as other aspects of memory. The resulting amnesia was said by Dr. Cameron to be "differential", in that amnesia for manifestations of schizophrenia would remain, while recollections of ordinary life happenings would return during the repatterning process.

E. Dr. Cameron's assessment of depatterning

Did depatterning work? Dr. Cameron certainly believed it did . In his published article on schizophrenic patients, Appendix 15, p. 17, he said:

> "With regard to efficiency, the first question to ask is, 'Does it accomplish what is intended?' The answer is quite definitely 'Yes'. It has resulted in a considerable increase in efficiency over the method of multiple shock therapy as introduced by Bini and Milligan and modified by subsequent workers. It represents, moreover, a noteworthy advance over insulin treatment and over the chemical therapies. Above all things, the readmission rate is greatly reduced. At the same time, we must point to the fact that it calls for a most considerable expenditure in time and effort and it requires the development of a team of workers who are highly skilled. (emphasis added)
>
> "With regard to the detrimental side effects, the most serious is of course the period of complete amnesia. We are working upon methods to reduce this and it is proper to say that while it is a source of trouble and annoyance to the patient during the first six months or so following discharge, a scaffolding of subsequent memories consisting in what he has been told of events which happened during the amnestic period gradually takes form."

The underlined passage is important, for reasons discussed in section 5 of this opinion.

It is well to bear in mind that Cameron was not the first, nor was he the only, psychiatrist to use depatterning techniques. Massive electric shock methods were apparently introduced by Cerletti, Bini and Milligan, for psychoneurotic patients, and reported in the medical literature as early as 1946. The method was transferred to the treatment of schizophrenia by Kennedy and Ancell, who labelled the treatment (misleadingly, according to Cameron) "Regressive Shock Therapy" and reported on it as early as 1948. Cameron cites three other groups who used the technique, reported in the literature in 1950, 1951 and 1957.

It was in 1955 that Cameron himself decided, in his words, to "develop the potentialities of this procedure". As stated above he used the procedure to treat both psychoneurotics (see the application to the Society for the Investigation of Human Ecology, Appendix 18, p.5 and the articles at Appendices 11, p. 985 and 12, p. 744) and schizophrenics (see Appendix 15).

F. Psychic Driving - further comments, and Dr. Cameron's assessment

Although sometimes used in conjunction with depatterning treatments, psychic driving was used in other situations as well. As explained, the technique consisted of the repetition of tape recorded messages, first of a negative kind designed to make the patient face his/her problem, and later of a positive kind designed to give the patient a new self image. During the "positive" period, the hospital staff would work with the patients to encourage them to put the new behavioural patterns into practice.

Dr. Cameron considered that:

> "Our best results have been with chronic psychoneurotics - and otherwise untreatable - patients, usually with a long standing character neurosis, with an anxiety hysteria or an anxiety

neurosis. With these patients our results have been increasingly encouraging, and we now consider that this is the procedure of our choice when faced with such a case." (Appendix 13, p. 107) (emphasis added)

G. The use of drugs - further comments

Drugs used included barbiturates (such as sodium amytal), amphetamines (such as desoxyn) and hallucinogenic drugs such as LSD-25 or mescaline. In addition, as part of the procedure preparatory to administering massive electro-shock therapy, small doses of curare were administered to produce a state of relative immobility to maintain the patient in the area of repetition. All these drugs were in common use by psychiatrists in Canada in the 1950's and early 1960's.

Because of the public attention that has been focused on LSD, I have added Appendix 19 which will illustrate just how widespread was its use.

H. Conclusions on the theoretical basis for and the efficacy of Dr. Cameron's procedures

On the theoretical side, it is now clear to psychiatrists generally that Cameron's depatterning, psychic driving and related procedures were not based on sound principles of science or medicine. Psychiatrists no longer accept the epileptic/schizophrenia dichotomy; and while there may be something in the idea that mental illness is the result of

poor mothering, Dr. Cameron pushed the idea much too far in exploring how it might apply to adults. Even when judged by the knowledge and standards of the day, it is now seen that the theoretical foundation for Dr. Cameron's work was very weak.

On the practical side, and judging by the standards of today, most psychiatrists would conclude that depatterning was a failure not only in terms of its efficacy as a medical treatment, but also in that it represented a level of assault on the brain that was not justifiable even by the standards of the time and even in light of the rather rudimentary level of scientific and medical knowledge of those days compared to today.

These conclusions are, however, evident only with the benefit of hindsight; and no medical doctor I spoke to was prepared to state that Cameron's depatterning procedures were conducted in disregard of the limits of acceptable medical practice at the time, or otherwise than out of desire to benefit the patients involved. These points will be elaborated in sections 5 and 6 of this opinion, but for the moment it should be noted that some doctors felt that, as a man driven to try to find solutions to the problems of mental illness, both in general and for particular patients, Dr. Cameron may have allowed himself subconsciously or unintentionally to go

beyond those bounds with respect to some particular patients; but this is of course speculation and, to repeat, none of these doctors were prepared to attribute any improper motive.

At the same time some individual doctors had doubts about the efficacy of the depatterning and psychic driving procedures during Dr. Cameron's tenure at the Allan; in fact these procedures were not free from controversy even within the Allan itself. However, these doubts took the form of "mutterings". Although everyone at the Allan, and most psychiatrists in Canada, knew about Cameron's work, and it was fully described in the open scientific literature for all to see, no one spoke out publicly against it. It is also worthy of note that Cameron's treatments were not used by his colleagues in psychiatric practice in other hospitals in Montreal, including those within the McGill teaching hospital system, in spite of Cameron's position as professor of psychiatry. They tolerated his techniques, but they did not adopt them. A discussion of these contemporary doubts will be found in section 5 of this opinion.

3. INVOLVEMENT OF AGENCIES OR DEPARTMENTS OF THE GOVERNMENT OF CANADA IN FUNDING THE AMI

Three agencies of the Government of Canada funded Dr. Cameron for various projects: the National Research Council (NRC) as predecessor to the Medical Research Council (MRC), the Defence Research Board (DRB), and the Department of National Health and Welfare (H&W). The DRB also funded other relevant research at McGill in the field of sensory deprivation. The activities of these agencies are discussed in turn.

A. National Research Council (NRC) as predecessor to the Medical Research Council (MRC)

The National Research Council, through its Associate Committee on Medical Research, made a grant to Dr. Cameron in 1944-1946 to study "psychological aspects of return to industrial civilian life" after the World War II. The grant number was M.P. 38, and the grant amounted to $3,000 for each of the two years.

Clearly this grant is not relevant to the matters under review in this opinion.

I have discovered a list (attached at Appendix 19A) of NRC Grants-in-aid for psychiatry, showing two other grants to Dr. Cameron. They are:

(a) No. 290 - Behavioural Laboratory - $4,197.00;

(b) No. 217 - Reactions of Civilians to Community Disasters - $650.00.

The first is an amount identical to the funding during 1950/51 from Health and Welfare to Dr. Cameron for Health and Welfare's Project No. 604-5-14, "Support for a Behavioural Laboratory" (see later). I can find no other information on NRC Project No. 290. From the figures, I assume that either NRC gave a matching grant during the one year in question, or Health and Welfare simply paid the money on N.R.C.'s behalf. Nothing of significance here turns on this grant.

As for No. 217, Reactions of Civilians to Community Disasters, this obviously represents a grant supplementary to DRB's grant No. 65 to Cameron (see later). Again, there is no further information in the file, and again, nothing of relevance here turns on this grant.

B. Defence Research Board (DRB)

(1) Introduction

The DRB was founded in 1946 as the research arm of the Department of National Defence. Dr. Omond Solandt was the

first Chairman, and he remained Chairman until 1957 when he was succeeded by Adam Hartley Zimmerman, Sr. (now deceased). The mandate of the DRB was to engage directly in research of its own, to contract out for specific items of research work, and to make grants to independent researchers, in areas of particular application to the military. The DRB was not to conduct basic scientific research, but rather applied research. Included in this was research in psychiatry and psychology, primarily to develop methods of testing the capabilities of potential recruits and serving personnel, to determine their suitability to withstand the stress of combat, and to study the effect of stress generally in the trying conditions of war and other emergencies.

(2) The Korean War and "brainwashing"

In the early 1950's there was great concern in the senior ranks of the military in Canada, United States and the United Kingdom about the new "brainwashing" techniques then being used by communist forces during the Korean War. Troops from these three countries who were captured during battle were sometimes subjected to these techniques and as a result were forced to make public statements, or "confessions", in which they renounced the beliefs and values of their own country and then espoused publicly those of the adversary. In certain cases there appeared

to be no physical coercion which could have accounted for this behaviour, and often the confessions seemed to be quite voluntary and genuine. Reports came back as to the way in which these confessions were extracted; troops had been subjected to long spells of isolation, followed by periods of indoctrination to the new beliefs. One such report is attached as Appendix 20. These techniques gave rise to real concern on the part of the western allies that the communists had discovered some new way of controlling the mind. They concluded that it was essential to find out everything that could be learned about these methods, so that our troops could be told in advance of communist techniques and, to the extent possible, trained to withstand brainwashing.

A high-level meeting took place at the Ritz Carlton Hotel in Montreal on June 1, 1951 to discuss the problem. Present were representatives of the scientific research establishments of the Canadian, the U.S. and the U.K. military. Dr. Solandt was Canada's chief representative. Dr. Donald O. Hebb, a psychologist from McGill University, was also present and proposed to the group that experiments in "sensory deprivation" might be carried out to determine whether something of the communists' brainwashing techniques might be learned. Attached at Appendix 21 is a copy of the minutes of the June 1, 1951 meeting; the handwritten note appended to these minutes (found

separately in DRB files) suggests that Commander Williams, one of those in attendance, was with the CIA.

(3) Sensory deprivation experiments of Dr. Donald O. Hebb

Shortly after the meeting of June 1, 1951, the DRB entered into a contract (designated the X-38 Project) with Dr. Hebb to conduct these "sensory deprivation experiments". The purpose of the work was to establish whether indeed prolonged periods of sensory deprivation reduces the subject's resistance to accepting new beliefs contrary to beliefs previously held. The work continued from 1951 to 1955 and involved some 63 paid volunteers, students from McGill University.

Dr. Hebb's practice was to place his subjects in a small cubicle in which external stimulae were kept to a minimum. The forearms would be covered with cardboard tubing, cotton wool would cover the hands, glasses would be worn which permitted only diffused light to enter, and there would be no auditory stimulation. The student would spend as much time in this situation as could reasonably be accepted, and was free to leave at any time. While in this state of sensory deprivation, the subject would be offered the opportunity of hearing material distasteful to him or her, through gramophone recordings. An extract from some of Hebb's earliest work will illuminate the point:

> "Three gramophone recordings were available to the subject, all with material the subject found unpleasant at the beginning of the experiment: (1) four repetitions of 16 bars from "Home on the Range"; (2) a 5-min. extract from a harsh atonal piece of music; and (3) an excerpt from an essay instructing and exhorting young children on the methods and desirability of attaining purity of soul. S could signal for any of these three. He signalled 42 times altogether, and spent a total time, listening to this material, of 2 hours and 21 minutes out of his 8½ waking hours. He was mostly unselective in his choice, usually requesting all three, one after another, and then, after a pause, going through them again. The only sign of preference was for (1) repeated bars from "Home on the Range". This subject is a college student, in the superior adult class intellectually, and this is not the kind of material that would be in any way entertaining to him. As noted above, he disliked the material to begin with, and reported that he still disliked it when the experiment was over."

Alternatively, the researcher might feed to the student a line of "propaganda" contrary to his or her own beliefs, to see if he could get the student to espouse that belief. The beliefs in question were quite innocuous - for example, a belief in the biblical account of creation, or a teetotaller's view. At Appendix 22 are copies of some DRB file materials on this research.

Although the work carried out by Dr. Hebb was originally classified, it has long since been declassified. Throughout most of the period when the work was being done, Dr. Hebb himself repeatedly implored the DRB to allow him to publish it. He also believed that failure to do so would result in the public getting the wrong impression when the

material did eventually leak out, as it inevitably would. Attached at Appendix 23 are some file materials, news clippings and correspondence which make the point well.

The conclusions reached by Dr. Hebb and his associates may be simply stated. A changing sensory environment is absolutely essential to the good health of the mind. Without it, the brain ceases to function in an adequate way, and abnormalities of behaviour develop; for example, the subject quickly begins to hallucinate. By "softening up" a prisoner through the use of sensory isolation techniques, a captor is indeed able to bring about a state of mind in which the prisoner is receptive to the implantation of ideas contrary to previously held beliefs. At Appendix 24 is a three page summary of these results prepared by DRB for Treasury Board on August 3, 1954.

Dr. Hebb, who died in August of 1985, was Canada's foremost psychologist, and the author of the seminal textbook, The Organization of Behaviour (1949). He was regarded as a very fine scientist and a humane and thoughtful person. He conducted his research with the highest regard for the welfare of the volunteer students. I have heard no suggestion of any impropriety in the conduct of his research. One person told me of an unconfirmed report that one student developed a form of mental illness following the experiment, but the suggestion is that the

illness was incipient in any event, and would have resulted regardless of Dr. Hebb's experiments.

As predicted by Dr. Hebb, his work did eventually leak out and become the subject of adverse press comment. As a result, Dr. Solandt was asked for an explanation, and then required to phase out the research. Appendices 23 and 24 give the background to this aspect of the matter.

(4) Connection between Hebb's work and Cameron's work

Dr. Hebb's work is mentioned in this opinion because some media reports, and some members of the public who have written to the government to express concern about Dr. Cameron's work, have referred to Hebb's work evidently in the belief that there was a close connection between the work of the two men. Dr. Cameron, being in close physical proximity to Dr. Hebb, was, of course, aware of Hebb's work and was himself interested in sensory deprivation from a psychiatric perspective. This is made clear in Hebb's letter of January 1, 1953 in Appendix 23. So were others at the AMI, as is shown by the letter from Dr. Cormier attached as Appendix 25. However, as stated earlier, the work of Drs. Cameron and Hebb are connected only in an intellectual sense; Cameron's work was not at all a continuation or an elaboration of Hebb's work. Cameron was often stimulated by the work of other

scientists in related or even unrelated fields, and sensory deprivation was just one of the new research areas in which he took an interest.

Hebb himself was contemptuous of Dr. Cameron's work in the field of sensory deprivation (as well as his work in psychic driving), so I was told by a number of the people I interviewed. In Hebb's opinion, Dr. Cameron did not have the necessary background in the principles and techniques of scientific investigation to understand properly how (if at all) Hebb's work in sensory isolation could be utilized in the treatment of patients. The question of Dr. Cameron's abilities as a research scientist is discussed fully in section 5 of this opinion.

(5) DRB funding of projects at the Allan

The DRB funded two research projects of Dr. Cameron. However, neither of these projects were related to the treatment of mental patients. The two projects in question (DRB grant Nos. 65 and 172 respectively) were entitled "Management of Fear and Anxiety by Civilians in the Event of a Community Disaster" (1948-1951) and "Behavioural Problems in the Adaptation of White Man to the Arctic". For an important reason discussed in section 5 of this opinion, the Chairman of the DRB, Dr. Solandt,

ensured that Cameron made no applications to the DRB for work in the area of psychiatric research dealing with patients.

The DRB funded a considerable number of other research projects at the Allan, projects conducted by associates of Dr. Cameron. I have coincidentally examined quite a lot of file material relating to these projects; none of it bears on the issues under review in this opinion. I have not considered it necessary to look further for DRB funding of psychiatric research involving patients at the Allan, for two reasons: first, in so far as Dr. Cameron is concerned, as mentioned above the DRB at Dr. Solandt's direction declined to consider any application that might be made; second, in so far as others at the Allan are concerned, I have no reason to believe that they would apply for, or receive, grants in the fields of activity under review here (namely depatterning, psychic driving etc.), which were peculiarly Dr. Cameron's fields.

C. Department of National Health and Welfare ("H&W")

(1) Introduction

In 1948 the federal government established the National Health Grants program to provide funds for health care in ten (later, thirteen) health areas. One of these was the

Mental Health Grant. Research grants made to the Allan by H&W during the period under review (from 1948 to 1964, when Dr. Cameron left the Allan) were made under this Mental Health Grant.

The background of the National Health Grants program is discussed in section 4 of this opinion.

(2) The form and manner of applying for a grant under the Mental Health Grant

Throughout the period with which we are concerned, the manner in which grant applications under the Mental Health Grant were handled was as follows (see Appendix 26 for various departmental memoranda and a sample application form):

(a) The institution (e.g. the AMI) would make an application in the form required by H&W, and then submit the application to the provincial authorities.

(b) The provincial authorities would then signify their approval of the application by forwarding it to H&W in Ottawa.

(c) H&W officials would review the application in a preliminary way to satisfy themselves generally as to the scientific and medical adequacy of the proposed research, and to ensure that all formalities had been attended to.

(d) The application would then be referred to two outside experts in the particular field of the proposed research. These experts would give detailed written commentary back to the Department. The comments would at all times remain anonymous.

(e) The Research Subcommittee of the Mental Health Advisory Committee would review each application to ensure its scientific and medical adequacy. The Mental Health Advisory Committee numbered about twenty. It was composed of experts drawn from outside the public service and involved in the disciplines of psychiatry, psychology and related fields. People from within the Department would sit as chairman and secretary of the committee to provide the necessary liaison. The committee therefore acted as a form of peer review.

(f) The Subcommittee would report its recommendations to the full Advisory Committee, who would then report to departmental officials.

(g) Departmental officials would then recommend the grants to the Minister, who would then send his approval back to the province.

(h) The provincial officials would then approve the grant directly to the institution.

(3) Grants to the Allan Memorial Institute

I turn now to discuss the grants for psychiatric research made under the Mental Health Grant to the Allan Memorial Institute and to Dr. Cameron.

In early 1985, the Department of Health and Welfare received an access to information request for "All letters and reports between 1950-64 relating to Dr. Cameron's and Allan Memorial Hospital's experiments in regards to project MK Ultra, Human Ecology, Brainwashing, and any letters and reports sent to the Central Intelligence Agency (CIA), USA". In answering, the Department consulted its master index, which lists nine psychiatric research pro-

jects for which Dr. Cameron is named as principal investigator. Total funds for these nine projects amounted to $495,444.41; the nine projects are listed in Appendix 27. In addition to these nine projects, I have identified a tenth project, No. 604-5-433, which began in Dr. Cameron's name and finished in 1965 in the name of a Dr. Davis, Cameron having by then retired. This project is entitled "The Influence of Psychotropic Drugs upon Cerebral Responses to Peripheral Stimulation in Man".

I have reviewed files on eight of these ten projects. (No files exist for the other two, Nos. 604-5-104 and 604-5-108, but from their titles as given in Appendix 27 it is apparent that they are not relevant here.) Of these eight, it appears on examination that Dr. Cameron was the principal investigator in only four; in fact, not only was he not the principal investigator in the other projects (contrary to the indication in the H&W master index), but his name is not even mentioned in the project files still available. It is speculated that, as head of the Allan, he signed the original project applications although not himself a participant.

Of the four projects in which Cameron was in fact principal investigator, only two are relevant here (the other two are No.604-5-76, "A Study of the Effects of Nucleic Acid Upon Memory Impairment in the Aged", and No. 604-5-433, referred to above). The two relevant files are:

(a) Project No.604-5-14 (1950-1954; $17,875.00)
Under this project, entitled "Support for a Behavioural Laboratory", a number of experiments were planned. One was to test memory and learning impairment due to individual and cumulative electric shock. Another was to film patients against a checkered backdrop before and after ECT treatment, to see if any differences in physical movements could be detected. A third was to study the effects of sensory isolation. A fourth was to investigate psychic driving techniques in various situations: while the patient was under hypnosis, in continuous sleep, and when the patient's resistance was lowered using the isolation techniques of Dr. Hebb. The final report to H&W is reproduced at Appendix 28.

(b) Project No.604-5-432 (1961-1964; $51,860.00)
This project is entitled "Study of Factors which Promote or Retard Personality Change in Individuals Exposed to Prolonged Repetition of Verbal Signals"; i.e. psychic driving. Copies of the summary and final report are attached at Appendix 29. This

study gave rise to five published papers, four of which are reproduced at Appendices 13, 14, 16 and 17.

It will be seen that both these projects had to do with psychic driving, used in combination with the procedures of depatterning, sleep therapy and drugs. As will be seen in section 7, these were also the subjects of investigation in the research work carried out by Cameron with CIA funds.

A further word on one of the apparently unrelated projects, No. 604-5-13, "Research Studies on EEG and Electrophysiology", is in order. This was an extensive project conducted at the Allan primarily by Dr. Lloyd Hisey, Psychiatrist in Charge, Electroencephalographic and Electrophysiological Centre (1950-1952) and his successor as of July 1, 1952, Dr. Charles Shagass. Much of this work, of which there are extensive reports published in the scientific literature, was supported by both H&W and DRB. Although these studies deal with specific aspects of psychiatric research, none of them bear directly on the topics of depatterning and psychic driving. The work did, however, cover topics such as photic stimulation (the use

of strobe lights)*, drug induced sleep and studies of the effects of electroshock (see Appendix 30).

Interestingly enough, the Society for the Investigation of Human Ecology (SIHE), the CIA "cover organization" (see section 7 of this opinion) was also interested in Project No.604-5-74, "A Study of Ultraconceptual Communication", a 1959-61 study under the direction of Leonard Rubenstein of the Allan (see Appendix 31). (Rubenstein was a collaborator with Cameron on the SIHE project on psychic driving under the CIA's code name "MK Ultra Subproject 68", discussed in detail later). I have seen no suggestion that the SIHE provided actual financing for this particular project, although it is conceivable that the CIA may have been interested in the subject matter of the project, dealing as it did with an examination of the ways in which the voice can communicate information on both a verbal and a non-verbal level, and can also convey feelings either consciously or unconsciously which are either allied to the verbal communication or reflect the speaker's emotional disposition. In any event, this project is not relevant to the subject matter under review in this opinion.

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*Strobe lights, when flashed on and off at certain frequencies, can bring on convulsion-like effects; thus it was thought that the technique could assist in clearing the "brain pathways".

In addition to these ten projects, there were of course many other grants made to other researchers associated with the AMI. Although I have not reviewed the files relating to these grants - indeed, to do so would have taken considerably more time and would have entailed a considerable enlargement of my mandate - I have reviewed H&W's list of projects funded between 1948 and 1963, and I have no reason to think that any of them have a bearing on the subject matter of this review.

(4) The method of dealing with Dr. Cameron's grant applications

Were Dr. Cameron's grant applications handled by the Department of National Health and Welfare in the same way as other applications?

A number of people I interviewed had been present at meetings of the Research Sub-Committee of the Mental Health Advisory Committee and recalled the fact that Cameron had indeed made application to the Mental Health Division for grants. However, none of them had any recollection of the particulars of these applications or of the ensuing grants. All those to whom I spoke advised that Dr. Cameron's applications would have been treated in the normal way; had this not been the case, they would have remembered the fact.

At the same time, it was recognized by those I interviewed that Cameron was looked upon as the doyen of Canadian psychiatrists. In the view of many of them, Dr. Cameron's pre-eminence in his field, added to his forceful and aggressive personality, may well have resulted in a certain deference being shown to his applications by those whose task it was to review them. There is no suggestion that anyone shirked responsibility and let pass a research project considered to be scientifically or medically unacceptable, nor is there any suggestion that there was not lively debate at the intellectual level when applications were being reviewed; indeed this seems to have been the norm even when applications of eminent people such as Dr. Cameron were being considered. What is suggested is that it is likely that some members of the reviewing groups may have been somewhat reluctant to express doubts, if indeed they had any, about the medical or scientific basis for the procedures under review in the proposal. It is to be emphasized that there is no actual evidence that this occurred; but human nature being what it is, it is in the view of some to whom I spoke reasonable to assume that this kind of deference could occur.

In summary, there is no evidence that the applications of Dr. Cameron and the AMI were treated in any different

manner by the government and its outside consultants than applications from any other quarter.

(5) Progress Monitoring

It was the Mental Health Division's practice to require grantees to submit an annual progress report. In fact, the grants themselves were made on an annual basis, while more often than not the project was intended from the beginning to last for a period of years. It was on the basis of these annual progress reports that the grant for subsequent years was approved by the Mental Health Advisory Committee.

In addition to this, it was the Department's practice to send representatives on occasional visits to the institutions where the work was being carried out; but because health is primarily a matter falling under provincial jurisdiction, departmental officials would ask permission of their provincial counterparts to make the visit. This permission was invariably granted, and certainly in Quebec the work of checking up on ongoing projects was carried out entirely by federal, not provincial, officials. But the point is that the federal government at all times "cleared the way" for the visits

of federal personnel to the grantees' institutions. The visitors would also obtain the permission of the institute itself in advance of the visit; there was no suggestion of "surprise visits". Moreover, the visit was not in the nature of an inspection; it did not constitute a detailed financial, medical or scientific audit. It was simply a matter of the Mental Health Division representative hearing from the investigator about the work that was being conducted under the grant, so as to be in a position to evaluate the annual application for renewal and also to ensure that the grant money was being spent generally on the project for which the grant was intended.

So far as Dr. Cameron and the AMI are concerned, there is no evidence that the annual visits were treated any differently with respect to this institution than any other. Indeed, it is my impression from interviews with former civil servants that visits to the AMI may have been slightly more frequent than to other institutions, possibly because of its pre-eminence, and also because Montreal was considered an agreeable place to visit! This, however, is a matter of impression only; what is clear is that there is no evidence to suggest that the AMI was either ignored, or deliberately made the subject of extra visits.

It may be asked how Canada's research grant system compared to that of other countries. Some scientists certainly held the view that Canadian granting agencies maintained much too close control of its grantees. Dr. Heinz Lehmann, an eminent psychiatrist and head of the Verdun Protestant Hospital in Montreal (now known as the Douglas Hospital Centre), certainly thought so, as is evident from the newspaper clipping at Appendix 32.

(6) Conclusions

In conclusion, it is my opinion that in relation to the structure and operation of its granting procedures, the Department of National Health and Welfare conducted itself at all times in a prudent and professional manner. The practice of careful internal review of all applications, followed by a referral of the applications to two experts in the particular field from outside the Department for detailed and anonymous scrutiny and comment, followed in turn by a review by the panel of qualified outside experts forming the Mental Health Advisory Committee and its Research Sub-Committee, in my opinion demonstrates the good faith and competence of the public servants responsible.