

IN THE MATTER OF A JUDICIAL BOARD ESTABLISHED BY THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO TO HEAR AND ADJUDICATE UPON CERTAIN CHARGES ALLEGED AGAINST DR. U.

JUDICIAL BOARD

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APPEARING FOR THE UNIVERSITY

Kathryn N. Feldman	Counsel
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APPEARING FOR Dr. U.

Ronald E. Carr	Counsel
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D E C I S I O N

The history of this matter and the charges themselves are reviewed in the Interim Decision of this Board dated April 17th, 1980. Subsequent to our Interim Decision an application was brought on behalf of Dr. U. to the Divisional Court of the Province of Ontario by way of Judicial Review for an Order in the nature of certiorari and for an Order quashing our said Decision. In its Judgment, issued April 3rd, 1981, the application was dismissed on the finding by the Divisional Court that the Governing Council of the University of Toronto has jurisdiction over this case under Section 2(14)(o) of the 1971 Act. Their Lordships were not prepared

to find that the Governing Council has the necessary authority under Section 48(c) of the 1947 Act. Since the charges set out in the letter from the Provost to Dr. U. dated May 30th, 1979, were framed in the language of Section 48(c) of the 1947 Act it is, therefore, implicit from the decision of the Divisional Court that our focus is now properly upon the charges as framed in the letter from the Provost to Dr. U. dated January 25th, 1980.

Under date April 7th, 1981, Notice was forwarded to all interested parties that a Hearing of this Judicial Board would commence on May 6th, 1981, in the Croft Chapter House, Room 183, University College, and by letter dated April 15th, 1981, Counsel for Dr. U. confirmed that trial would commence on that date. At that time the parties and their Counsel attended before us and we proceeded to hear evidence and argument with respect to the merits of the charges being asserted against Dr. U.

At the commencement of the Hearing Mr. Carr advised the Board that Dr. U. was prepared to admit that significant portions of Chapter 2 of his Thesis were taken without acknowledgment from the work of Dr. J. Kent Davis entitled "Concept Identification as a Function of Cognitive Style, Complexity and Training Procedures", (the Davis work). He made it clear that in making that admission he was not acknowledging that Dr. U. was guilty of the offence of plagiarism and that the admission extended only to the particulars as set out in the charges framed by the Provost of the University.

Dr. U. commenced his academic studies in his native country of Zaire and proceeded as a Fulbright scholar to attend the University of Southern California where he received a Bachelor's degree in 1967 and a Master's degree in 1969. In the Fall of 1969 he was admitted on scholarship into the Ph.D. program in the area of Applied Psychology at the Ontario Institute for Studies in Education (OISE). OISE is affiliated with the University of Toronto and the candidates in its Ph.D. program are considered to be Ph.D. candidates within the University of Toronto, with the successful candidates obtaining their degrees from the University of Toronto. The Ph.D. program requires three years in residence, followed by the necessary investigatory and research work for the completion, submission and defence of a thesis. Dr. U. successfully completed the program, submitted a thesis and ultimately received his Ph. D. degree from the University of Toronto at the Fall convocation in 1974. Since that date he has been working in the area of his specialty in the U.S.A. He is presently the Director of the _____ and he has apparently been associated with that organization in some capacity since 1966.

Both OISE and the University of Toronto have publications available for graduate students setting out the requirements and standards that are expected. Copies of these publications covering the period of time during which Dr. U. was obtaining his Ph. D. degree were filed on the Hearing and certain portions of them were referred to by Counsel in the course of examination and argument. OISE publishes a graduate studies handbook for students and faculty

and at all material times that publication contained words identical or equivalent to the following quotations from the Handbook as it existed at the time of Dr. U. 's residency period in the program. At page 6 of the Handbook the following is stated:

A major requirement for the Ph.D. degree is the candidate's presentation of a thesis embodying the results of original investigation, conducted by himself on the approved topic from his major subject. The thesis shall constitute a significant contribution to the knowledge of the field. The work upon which the thesis is based must be carried on under the direction of one or more members of the Faculty of the School of Graduate studies.

Later in the same Handbook, at page 25, the following is set out:

Use of Quoted Materials

The author of a thesis is reminded that the microfilming of theses means that microfilm copies are available for sale. It is, therefore, important that he should follow the proper procedures with respect to the use of quoted materials. Full citations must be given for all quotations.

If the length of a quoted passage is more than approximately 200 words (20 to 25 lines) the author should normally obtain permission to use it from the author or publisher of the material in question.

In general, it is not necessary to secure permission to use brief quotations in a work of scholarly criticism or analysis. This comes under what is called in legal terms "fair use" in the course of comment. The situation is different if the quotations are being used in such numbers, such length and such a way that the resulting manuscript begins to resemble an anthology. It might well be necessary to secure permission for such extensive quotations.

The University of Toronto publishes a calendar for the School of Graduate Studies and in the calendar for the year 1973/74 the following is stated at page 18:

Acknowledgement of Source Materials

In all theses and major essays submitted to the School of Graduate Studies in conformity with the requirements for graduate degrees, source materials used must be properly

acknowledged. If they are not, the submission may be disqualified and may have to be resubmitted in a corrected form. Where deliberate plagiarism is suspected, disciplinary proceedings may be initiated.

And at page 22 of the same Calendar the following is set out:

The candidate, through the Department, shall present a thesis embodying the results of original investigation, conducted by the candidate, on the approved topic from the major subject. The thesis shall constitute a significant contribution to the knowledge of the field.

Equivalent language was contained at all material times in the School of Graduate Studies Calendar published by the University of Toronto.

Dr. Lynn Davie is the present incumbent in the position of Assistant Coordinator of Graduate Studies at OISE. He has held that position for five years and is the person within OISE responsible for supervising final oral examinations and theses in the Institute. Through his evidence he identified the various U of T Calendars and OISE Handbooks which were filed on the Hearing and outlined the relationship between OISE and the University of Toronto and the fact that Ph. D. candidates at OISE were considered to be subject to the rules and academic standards of the University of Toronto. During the course of his examination objection was taken by Counsel for Dr. U, to certain questions calling for opinion evidence from the witness and at that point he was examined and cross-examined as to his knowledge, experience and involvement in the process for obtaining the degree of Ph. D. After the cross-examination it was conceded by Counsel for Dr. U. that Dr. Davie

had been qualified to answer the questions being posed. It was his evidence that OISE and the U of T are part of an educational community and that it is the common understanding that ideas and words belong to the person who originates them and that the use of such ideas and words without acknowledgement constitutes an academic offence. He indicated that as a result of a letter received from J. Kent Davis in the office of the Dean of the School of Graduate Studies on May 18th, 1977, he obtained a copy of the Davis work and of Dr. U. 's thesis and proceeded to read and compare them. Both the thesis and the Davis work were filed as Exhibits on the Hearing. It was the opinion of Dr. Davie that in the U. thesis a number of sections had been taken verbatim from the Davis work. He further indicated that there were some sections wherein there had been paraphrasing and editing and, in his opinion, most of the portion of the Davis work dealing with the review of the existing literature in the field found its way into the introduction and Chapter 2 of the U. thesis. Dr. Davie then gave specific examples wherein he correlated the two documents. Chapter 2 of the U. thesis is headed "The Problem and its Setting" and comprises in all some 60 pages. The comparison of the two documents would indicate that of those pages at least 22 of them draw heavily or totally on the Davis work. The five page introduction to the U. thesis also takes heavily from the Davis work. It was Dr. Davie's evidence that if acknowledgement had been given, the thesis would not have been acceptable. He

stated that the basic requirement for the degree was independent original work. Chapter 2 did constitute a review of the existing literature in the field, but if it were done in that way, it would call into question whether the review really resulted from the independent work of the candidate.

In the course of his cross-examination Dr. Davie agreed that the oral defence of a thesis was very exhaustive and was conducted by people who were very familiar with the area and with the existing literature in the field. He agreed that so far as he knew, the plagiarism was found exclusively in the introduction and Chapter 2 to the thesis, which portions constituted a review of the work of others in the field. He stated strongly, however, that the review of the literature was related to the position of the thesis in the overall field and that the review was not an insignificant part of the thesis. It was Dr. Davie's evidence that the review had to constitute a review and summary by the candidate himself.

Dean John F. Leyerle was also called by the Provost to give evidence to the Board. He is Dean of the School of Graduate Studies, a position which he has held since the year 1978. He has been associated with the University of Toronto since 1959, having held the rank of Professor since 1966. He described his present duties as including the maintenance of the quality of graduate training and research and to uphold the rules within the School of Graduate Studies. He defined plagiarism as the wrongful appropriation of the publication,

work or ideas of someone else and equated it to literary theft. He stated that the seriousness of plagiarism increases with the level at which work is being pursued and that the entire educational system is based on the integrity and trust of people reporting their writings. It was his view that the effect of plagiarism is to impugn those who do it and those who supervise the thesis and certify it as original work, and that it impugns both the institute that gives the degree and the degree of everyone else who holds one. In his view, once it has occurred, any work from that person becomes suspect. He indicated that plagiarism was very difficult to catch or check adequately and that it would undo the entire academic system if everyone's work had to be checked on that basis. He had reviewed and compared the U. thesis with the Davis work and confirmed the evidence of Dr. Davis as to the extent in which the Davis work found its way into the U. thesis. As to the extent of use, he expressed the opinion that the statement of the problem by U. was based on Davis and that the Davis materials essentially constituted the ladder by which U. ascended to his problem. It was his evidence that the intellectual framework of Chapter 2 in the U. thesis belonged to Davis and that in the academic context it would be assumed that that intellectual framework was the original work of U. He described Chapter 2 as a "cut and paste" job with editorial intervention to tie it all together and, in his view, it must have been done intentionally.

Dean Leyerle was asked what would have been the result if the thesis had been submitted with proper acknowledgement and he responded that this would have required some 20 or 30 references to the Davis work. In those circumstances, Dean Leyerle expressed the view that the examiners would have concluded that it did not constitute proper scholarship and what would then result would depend on the overall circumstances. In his view there was no way that such extensive use of another material could be inadvertent and in his view the examining committee might well at that time have referred the matter for disciplinary action. Dean Leyerle expressed the view that such extensive use of another scholar's work calls into question the existence of originality and scholarship and, in his view, once plagiarism occurs it is not something that admits of being corrected and then proceeding as if nothing had happened. He stated that plagiarism was totally incompatible with the system and what the University is about to permit it to be purged.

In the course of his cross-examination Dean Leyerle agreed that plagiarism had to be a wrongful appropriation and that if it was inadvertent and accidental an accommodation could be made. He agreed that totally innocent conduct could not constitute plagiarism, but he stated that he could conceive of no scenario on the fact situation before this Board in which the conduct was not deliberate and that once there existed deliberate plagiarism everything else is suspect. He stated that the whole structure of higher education and training depended

on that concept. On the aspect of the significance of Chapter 2 within the overall thesis Dean Leyerle stated in the course of cross-examination that in a thesis the hypothesis had to grow out of the review done by the candidate of the literature in the field. The most important part of the research is in the posing of the question that is to be researched. Dean Leyerle stated that a candidate must master the field in order to make a useful contribution and extension to that field of knowledge.

The Doctoral Committee in charge of Dr. U.'s thesis preparation was chaired by Dr. Kenneth G. O'Bryan and included Dr. Harry Silverman and Dr. Vince R. D'Oyley. Of those, only Dr. Kenneth G. O'Bryan was called to give evidence before the Board with respect to the thesis itself. He stated that throughout his period of supervision of Dr. U.'s thesis he had no specific discussions with Dr. U. about what constituted plagiarism and he stated that at that academic level it is assumed that everyone knows what it is. He indicated that Dr. U. had been a straight A student and that he had been very satisfied with his work. It was his opinion that Dr. U. was, indeed, familiar with the existing literature in the field at the time he prepared the thesis. He had compared the U. thesis with the Davis work and agreed with the evidence of other witnesses on the extent to which portions of the Davis work found their way into the thesis. In his opinion, if the material had been footnoted and acknowledged it would not have been acceptable as it exceeded

fair usage and would indicate that not enough original work had been done. He stated that Davis was not a well known authority and that no one in the Department at the time had heard of him and that he had not been published in the recognized journals. In cross-examination Dr. O'Bryan expressed the view that if the thesis had come with footnotes he would have called a meeting of his Committee to discuss it and, in all probability would have turned the matter over to the Chairman of the Department to deal with it from that point on. Dr. O'Bryan suggested that the Departmental Chairman might either proceed to disciplinary proceedings or require that the thesis be re-written. He stated that it was a much more serious situation if the use of other material is discovered than if it is acknowledged. Dr. O'Bryan stated that he was satisfied that the research in the subsequent chapters of the thesis was generated by Dr. U. as it is of the nature that would be very hard to find elsewhere in the literature.

As previously stated, Dr. U.'s Counsel at the outset of the Hearing acknowledged that significant portions of Chapter 2 were taken without acknowledgement from the Davis work. In his testimony before the Board Dr. U. stated that after completion of the three-year residency period he returned to California where the research and writing for his thesis was completed. The first draft of his thesis was submitted in the Fall of 1973 and he stated that that draft contained essentially all of the thesis as finally presented, including the introduction and Chapter 2. He indicated that during

the period of his research and writing he was a full-time employee at the _____ and he further made reference to certain time and family pressures to which he was subject at the time of submitting the thesis in its final form. He testified that he first became aware of the Davis work in 1973 in California when he was starting to put his own thesis together and that he was aware of the Davis work before the preparation of the first draft. He had not been aware of the Davis paper during the time he was at the University of Toronto, although there had earlier been evidence that the Davis paper was available in the OISE library on microfiche since some time in the year 1969. He stated that he had had no intention not to acknowledge the Davis work in his thesis and he stated, with particular reference to page 16 in his thesis, that he had made specific reference to work in the field by authors named Witkin, Kagan and Gardner. He stated at that point there had also been dictated a reference to the Davis work, but that in transcribing the tapes which he had dictated in the course of preparation of his thesis the secretary who transcribed them omitted the reference. He further stated that with respect to the bibliography attached to the thesis he had, again, relied upon the secretary to pick up all works that had been referred to in the body of the thesis and, since the reference to the Davis work had been omitted by accident in the body of the thesis, it was also omitted from the bibliography. He strongly disagreed with the evidence of Dean Leyerle that the Davis work was the "framework, ladder or structure" upon

which the chapter was based. He stated that the emphasis and perspective within his work was totally different from that of Davis and that there were studies in his review of the literature that were not referred to in the Davis work. In the course of his cross-examination he agreed that he was aware of what constituted plagiarism and that one was not supposed to do it. He was asked by Counsel for the Provost whether it would be fair to say that to the extent that Davis had not missed studies, Davis had done it very well and that U. adopted the Davis language on cognitive style. U. responded to the effect that he would say "yes" but that there were relevant areas for his purposes that Davis had not covered. U. indicated that the Davis material was a restatement of facts made by others and that it did not enter his mind that he was stealing Davis's work. Dr. U. did not agree that, had he put all the material in quotation marks and given acknowledgement, the thesis would not have been accepted. He suggested that, perhaps, the style had not been the right one. He agreed with Counsel for the Provost that certain portions were word for word from Davis, but he maintained that the emphasis was different. He stated that he was dictating and summarizing the original works and Davis work at the same time, and it was his view that Davis had put them in perspective and that he would acknowledge Davis in the manner previously mentioned in his testimony. In his view he was not adopting Davis's material as his own, since it only constituted a review of the existing literature. He was asked why he had not written the material in his own

words in the first place and he responded to the effect that the style was wrong, but that the facts were there. He considered that he was summarizing original works and that it was sufficient that Davis's name would be appearing in the acknowledgements. Dr. U. stated that he dictated the thesis, and that he proofread it after it was prepared only once, and that when he reviewed it he reviewed it for overall content on what mattered. He indicated that the thesis had gone through three drafts and that the review of the literature was substantially in its final form in the first draft. He stated that he had been through all of the background material and that it was only at the time that he was actually dictating his summary of that material that he made use of the Davis work.

It was argued by Counsel for the Provost that two issues came before this Board. Firstly, did Dr. U. commit the offences as charged and secondly, if he did, what consequences should follow. We were referred to the definition of plagiarism contained in the Shorter Oxford English Dictionary which states:

Plagiarism - The taking and using as one's own of the thoughts, writings or inventions of another; a purloined idea, design, passage or work.

Since Dr. U. acknowledged that the words of Davis appeared in his thesis without any acknowledgement, it was then for the Board to determine whether the explanation was satisfactory. Mrs. Feldman conceded that it could not be an offence if innocent and that, therefore, it must be done with knowledge. In her view, the test was whether

an individual knew he was using the work of another without giving credit and, if so, the offence had been committed. She stated that it was possible for two people to think of the same formulation of words or ideas and that, in those circumstances, it was a coincidence and not plagiarism. She further stated that if one works in an area for a long period of time and takes notes, it may well be that, innocently, one could incorporate the words of someone else. Those circumstances, however, clearly did not represent the evidence that was before us. In her view Dr. U. knew he had incorporated into his thesis work from Davis and at the most he intended to put in one reference on one page. She argued that this was simply not a credible explanation, nor indeed was it credible that an A student who was obviously an articulate and intelligent man with extensive academic experience would be so careless as to exclude a reference relevant to so many pages of his material. She further pointed out that the source of the material which Dr. U. used was relatively obscure and not readily accessible and was not known to Dr. U.'s supervisors at OISE. Even the one reference would have been totally inadequate in the academic context.

With respect to the extent of knowledge that must be attributed to Dr. U. in order to constitute the offence of plagiarism Mrs. Feldman made reference to re Gilzon (1979) 22 O.R. 2d. 756 as authority for the proposition that it is sufficient Dr. U. was aware that he was using the material of another and it was not necessary that the Provost go beyond that to establish any more particular

wrongful intent.

On the aspect of penalty Mrs. Feldman argued that the degree cannot stand if it is based on a thesis that contains plagiarism. The standards of the University and the importance of the integrity of the degree had been established on the evidence and it was fundamental to the system to maintain the integrity and the reliability of scholarship. She argued that Dr. U. was no longer a part of the University and that the aspect of deterrence becomes of paramount importance in the consideration of the appropriate penalty. It would be inappropriate for this Board to take any action that might constitute a statement that if someone is caught in the offence of plagiarism they will be given another chance within the system. She described plagiarism as being the most serious of academic offences, and she submitted strongly that the degree must be revoked.

In his argument Counsel for Dr. U. suggested that the conduct must be evaluated in the light of the standards in force in 1974 and that it was already a matter of record that the academic code of 1975 had been ruled inapplicable to Dr. U. 's case. The same principle, he argued, rendered the Gilzon case inapplicable. He noted that the Calendar issued by the School of Graduate Studies in the quotation previously set out from page 18 appeared to recognize a distinction between deliberate plagiarism and a failure to acknowledge and that the latter could be corrected and resubmitted. In his view, before the plagiarism could be considered deliberate, it was not sufficient

that the individual involved do it knowingly or consciously as opposed to subconsciously. Rather, he argued, there must be mens rea in that there is an intent to pass off the work of the other author as one's own. He argued that in order to revoke Dr. U. 's degree we must find that he intended to use the Davis work as his own and on that aspect of the matter Mr. Carr argued that whether we find the explanation of Dr. U. sufficient, it does clearly negate the wrongful state of mind that is essential to the offence. Mr. Carr conceded that Dr. U. may have been careless in his final review of the thesis, but he stands before this Board charged with plagiarism, not carelessness. Mr. Carr further stressed that the "borrowing" was only with reference to the secondary materials wherein he made use of portions of the Davis work and that it did not apply to the more substantial portions and the original research and the investigations leading to the other chapters of the thesis. Mr. Carr pointed out that the concern expressed by witnesses was that Dr. U. had not, in fact, done the original research. The evidence of Dr. O'Bryan, however, had been that he was satisfied that Dr. U. was familiar with the basic works in the field.

Mr. Carr further referred the Board to the fact that on the evidence Dr. U. was an A student and did not have to plagiarise in order to put together a thesis. It would be illogical to conclude that he would be prepared to place in jeopardy five years of work by

passing off, as his own, another's work in a secondary portion of his thesis. In Mr. Carr's view this was not a situation of deliberate plagiarism but, rather, simply an error in giving the appropriate acknowledgements.

On the aspect of penalty Mr. Carr argued that the penalty as proposed by Mrs. Feldman did not purport to deal with the individual involved but, rather, sought to set an example for the balance of the University Community. Mr. Carr stressed the fact that Dr. U. had been an A student throughout his career, having obtained his education on scholarships and that he was now performing at a high level in the field of his academic specialty. The thesis represented the culmination of five years of work and the substantial portion of it had not been impugned on the evidence and had passed the rigorous examination at the time of its presentation. The revocation of the degree would have irrevocable and unjustified consequences for Dr.

U. and it was the opinion of Mr. Carr that the legitimate interests of both parties ought to be considered by this Board in its deliberations as to the appropriate action to be taken. Mr. Carr suggested that the appropriate response of this Board would be to suspend the degree for such time as would be necessary for Dr. U. to re-submit the thesis in form that was acceptable to the University of Toronto with whatever credits or revisions are needed. It would be for a new Doctoral Committee, set up by the University, to review the thesis and before whom it would have to be defended by Dr. U. Mr. Carr

argued that this could, in no way, be considered to be a light penalty or be perceived within the University community to constitute a licence to plagiarize. He suggested that this procedure would protect the integrity of the degree and of the Institution. He suggested that it was not appropriate for this Board to take upon ourselves the task of evaluating the thesis as an academic document and that if we proceeded simply to revoke the degree that is, effectively, what we are doing.

The voting members of this Board are unanimously of the view that on the totality of the evidence that is before us the use of the Davis work in the U. thesis constituted plagiarism and that Dr. U. is, therefore, guilty of the first charge specified in the letter to him dated January 25th, 1980, from the Secretary of the Governing Council, University of Toronto. We find on the evidence that his use of the material and his failure to acknowledge in the credits and the bibliography to the thesis were both done deliberately and intentionally and for the purpose of passing off the Davis work as his own. The Chapter in which the plagiarized material appears is not a secondary or unsubstantial portion of the thesis, but is an integral and constituent part of the whole document. The standards of academic integrity apply to that portion of the thesis no less than to all other portions thereof. It is clear from the evidence that had the thesis contained in appropriate form acknowledgements as to the extent of material that

had been used from the Davis work it would not have been considered acceptable within the University's standards and we would find that it was for that reason, and not for the reasons stated by Uyidi in his testimony, that acknowledgement was not given.

The voting members of the Board are unanimous that, in the circumstances as disclosed by the evidence, the degree must be recalled and cancelled. It is, further, unanimously their view that the thesis is not a proper document to be on file in the University of Toronto libraries or to be circulated under the auspices of the University of Toronto. In rendering Judgment, including penalty, it is, therefore, our decision; and we so report to the Governing Council that:

- 1) *Dr. U.* is guilty as charged with respect to the first charge set out in the letter to him dated January 25th, 1980, from the Secretary of the Governing Council of the University of Toronto.
- 2) The Ph.D. degree granted to *Dr. U.* at the Fall Convocation of the University of Toronto in 1974 be recalled, and it is hereby cancelled.
- 3) The name of *Dr. U.* is to be stricken from the record of graduates of the University of Toronto.
- 4) The foregoing provisions 1), 2) and 3) are to be permanently recorded on his transcript.
- 5) We would direct the withdrawal of the original thesis from the University Library and we would further direct the withdrawal of all copies shelved or filed in any

division of or institution affiliated with the University of Toronto. In addition, we would direct that the University advise the National Library of Canada and any other firms, organizations or institutions maintaining data bases which are likely to include the thesis that it should be removed from their records, and we would further direct the University to use its best efforts to recall all copies of the thesis, the location of which the University of Toronto is now, or may hereafter, become aware.

- 6) We direct that Notice of this decision be published by the University to the academic community.

In the event that Dr. U. should at some future date seek re-admission to the University of Toronto, the majority of the Board are of the view that his application should be considered by the appropriate admissions officials, based on all the facts and circumstances as they may then exist, without any specific recommendation from this Judicial Board. Two members of the Board, however, Professor J. B. Conacher and Mr. Thomas H. Simpson, recommend in view of Dr. U.'s good academic record as a Fulbright scholar from Zaire at the University of Southern California and as a scholarship holder at OISE, and in view of the fifteen years of service which he has completed at the

, of which he is now Director, and in view of his continuing family obligations, that in the event of his re-application to the University of Toronto after the implementation of the above decision, he should be allowed to re-register as a doctoral candidate at OISE without further residency and on such terms as OISE and the School of Graduate Studies may require.

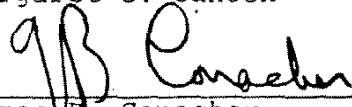
DATED at Toronto this 18th day of June, 1981.




Ross L. Kennedy - Chairman



Margaret C. Cahoon



James B. Conacher



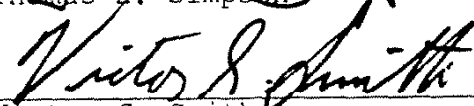
Mary C. D. Kent



D. A. Brian O'Riordan



Thomas H. Simpson



Victor G. Smith