

# Alienation Among Professional Engineers: A Canadian-American Comparison

## Comparaison sur l'intensité de l'aliénation parmi les ingénieurs canadiens et américains

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### Résumé de l'article

Le concept d'aliénation, tel qu'on l'utilise couramment en sciences sociales, peut se rattacher à deux traditions théoriques: la théorie de l'aliénation exposée par Marx et la théorie de l'anomie établie dans les travaux de Durkheim. Toutefois, la tradition marxienne a exercé une influence plus marquée en ce qui a trait à la substance même de l'aliénation et aux périmètres de la recherche sur le sujet. La dimension historique et empirique de la théorie de l'aliénation chez Marx comporte des exemples de situations antérieures comme des salaires inéquitables, des conditions physiques et psychologiques inhumaines consécutives aux exigences des employeurs et du monde des machines qui conduisent à un état d'aliénation.

En particulier chez des hommes de profession, des facteurs comme une science spécialisée au contenu intellectuel considérable, une grande autonomie d'action, la responsabilité, l'influence et un engagement marqué envers la profession sont vivement valorisées. Si la structure de contrainte ou de stimulation au sein d'une entreprise tend à amoindrir de telles valeurs, les hommes de profession peuvent en arriver à ressentir une privation du sens et de la fierté dans leur travail et adopter à son endroit une attitude de laisser-aller avec toutes les conséquences qui en découlent. Ainsi, la perspective théorique précédente pourrait inciter à formuler l'hypothèse selon laquelle une contrainte moins forte et une stimulation plus grande auraient pour résultat de diminuer l'aliénation ressentie par les hommes de profession. Dans la pratique, une contrainte moins forte se traduit par la décentralisation des prises de décision, la participation à la supervision et une liberté professionnelle accrue. Les autres stimulants professionnels sont le climat au sein de l'entreprise et l'appui accordé à l'activité professionnelle. En ce qui a trait à l'aliénation, on a soutenu que l'insatisfaction personnelle, définie comme la privation du sens et de la fierté dans le travail et une attitude de laisser-aller à son endroit, est une définition adéquate de l'aliénation dans un contexte de travail tel que la chose ressort fidèlement de la conception marxienne et que, en conséquence, elle doit être considérée comme l'élément principal dans les études sur l'aliénation beaucoup plus que simplement l'un de ses aspects. Aussi, l'insatisfaction personnelle a-t-elle été choisie comme mesure de l'aliénation dans la présente étude.

On a également signalé récemment qu'une enquête comparative au sein des institutions et des sociétés peut favoriser beaucoup les interrelations entre elles. Cependant, la plupart des travaux qui font des comparaisons entre les employeurs de différents pays négligent totalement le Canada et considèrent les milieux de langue anglaise qui vivent en Amérique du Nord comme une unité homogène sans noter les différences entre les conditions canadiennes et américaines. Les observateurs ont présenté la société canadienne comme une société moins égalitaire, moins tournée vers la conception et moins individualiste que la société américaine, la première s'appuyant sur le système européen des valeurs et s'écartant des attitudes américaines. La présente étude tente de vérifier cette affirmation en comparant les ingénieurs canadiens et américains quant à la perception qu'ils ont de l'effet de la structure de contrainte ou de stimulation sur leur degré d'aliénation.

### La méthode suivie

Les données canadiennes ont été obtenues de 189 ingénieurs qui étaient membres de l'Association des ingénieurs de la Colombie Britannique et qui travaillaient pour diverses entreprises de la province. L'échantillon américain, extrait d'un travail de Miller, regroupait 211 ingénieurs qui oeuvraient au sein d'une grande société aérospatiale. Fondamentalement, le présent travail est une réplique partielle de l'étude initiale de Miller et les résultats sont juxtaposés aux résultats de l'étude canadienne aux fins de comparaison. Les données furent recueillies au moyen d'un questionnaire envoyé par la poste à la résidence des ingénieurs canadiens. Les variables spécifiques utilisées dans l'évaluation du degré d'aliénation consistaient dans le type de supervision, la liberté de s'adonner à la recherche, le climat professionnel et les encouragements de la part de l'employeur. Les échelles de mesure sont celles qu'on retrouve dans l'étude de Miller.

### Les résultats obtenus

L'étude a démontré que la dimension empirique de la théorie d'aliénation de Marx a beaucoup de valeur comme fondement d'une analyse du phénomène d'aliénation. Elle offre une armature sérieuse pour comprendre les facteurs explicatifs pertinents au groupe observé et elle permet de procéder à la vérification empirique de diverses hypothèses. La notion marxienne, en tenant compte de la diminution des contraintes et du développement des stimulations, permet un amoindrissement de l'aliénation de même qu'elle apparaît soutenable quand on l'applique à des groupements professionnels. En outre, les résultats obtenus ont révélé que les ingénieurs canadiens se sentent moins aliénés que les ingénieurs américains. Pour les ingénieurs canadiens, l'impression d'aliénation semble porter sur la liberté de s'adonner à la recherche, sur le climat professionnel et sur le soutien qu'ils reçoivent de l'entreprise. Tandis que, pour les ingénieurs américains, elle est imputable à la liberté de s'adonner à la recherche et au climat professionnel. Cette observation accrédite l'idée qu'il existe une différence entre les valeurs et les préférences des Canadiens et des Américains.

Bien que l'étude dont il est rendu compte soit de caractère modeste, les résultats sont de nature à favoriser la distinction entre les aspects les plus et les moins susceptibles d'engendrer l'aliénation dans une structure tendant à favoriser les contraintes ou les stimulations à l'intérieur d'une entreprise de telle sorte qu'il est possible de les modifier si l'on veut diminuer l'impression d'aliénation chez les ingénieurs. En restreignant leurs investigations à un seul groupe professionnel, les auteurs furent en mesure de jauger plus précisément l'impact d'une structure contraignante sur l'aliénation. On peut considérer que cette recherche, envisagée d'une façon surtout conceptuelle, est un pas vers une meilleure compréhension de l'effet des facteurs d'aménagement sur l'aliénation d'où il reste à poursuivre cette recherche empirique avant qu'on puisse en comprendre clairement les fonctions.

# Alienation Among Professional Engineers

## A Canadian-American Comparison

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*The purpose of the study is to empirically verify the Marxian proposition that increased (decreased) control and decreased (increased) professional incentives bear a positive (negative) relation to alienation; and to look for possible differences between Canadian and American engineers with regard to the relationship between alienation and control-incentive structure.*

With the technological explosion underway, and with its rapid fragmentation of the areas of expertise, industrial organizations are becoming increasingly dependent upon their professional staff for successful management of their enterprise (Galbraith, 1967; Marcson, 1960). However, if the enterprise cannot provide an environment that satisfies the needs for individual autonomy, responsibility and achievement it is likely to create a state of alienation among its members. Such disenchantment among professionals may lead to serious economic consequences for the organization and to society. Previous research on professionals in organizations suggested the existence of possible incongruence between the needs of those individuals and the way organizations were managed (Blau & Scott, 1962; Kornhauser, 1962, Miller, 1967). Such incongruence creates alienation which results in less effort and performance and more tardiness from work (Cummings & Muring, 1977). Therefore it is important to study alienation and its antecedents among professional people.

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The concept of alienation as it is used in current social science literature can be linked to two theoretical traditions: the theory of alienation developed by Karl Marx and the theory of anomie articulated in Emile Durkheim's works. However, the Marxian tradition has exerted a stronger influence so far as the substance of alienation and the areas of alienation research are concerned (Ludz, 1976). The Marxian theory of alienation consisted of three dimensions: (1) the philosophico-historical, (2) the theoretical, and (3) the empirico-historical (Ludz, 1976). In the philosophico-historical dimension, Marx's concept of alienation appears "to draw completely upon an image of man as the non specialist and fully developed individual" (Jenknner, 1965: p. 206). Such a view of man is no longer valid given the subsequent literature in social science (Ludz, 1976). In the theoretical dimension, alienation is viewed as a total phenomenon encompassing the entire human condition. Because of the global nature of this approach, it is difficult to capture anything specific in terms of meaning. Again, as a result of attempting to comprehend very different relations that constitute a "syndrome" the use of the term "alienation" to designate all of these relations severely limits its descriptive content (Schacht, 1970). However, the empirico-historical dimension of Marx's theory of alienation provides empirical examples of antecedent conditions, such as inequitable wages, inhuman physical and psychological conditions governed by the demands of capital and the world of machines which lead to a condition of alienation. As a result, unlike the other two, the empirical dimension in Marx's theory of alienation has been of considerable importance in understanding alienation and its correlates in contemporary social science. A specific derivative from the above perspective would state that an individual worker lacking control over his or her working life is bound to be estranged from it (Kanungo, 1979). In other words, the lack of autonomy and control and its consequences define the Marxian concept of alienation. Developing this notion further, Weber placed special emphasis on the absence of freedom to make one's own decisions, the lack of personal responsibility and frustrations in proving one's worth through achievement at work as explanatory factors of alienation. Though Marx confined his observations to wage workers, Weber expanded it to include other occupations and professions as well. "The modern soldier is equally 'separated' from the means of violence, the scientist from the means of enquiry, *the engineer from the means of professional fulfillment* (italics: authors' own insert), and the civil servant from the means of administration" (Gerth & Mills, 1946: p. 50). Translating the above in motivational terms Kanungo (1979) developed a theory of alienation which stressed the importance of the nature of control exercised by the organization over its members and the incentive structure of the organization geared toward satisfying members' needs for autonomy,

growth, and self fulfillment. Especially among professionals, factors such as specialized competence with considerable intellectual content, extensive autonomy, responsibility, influence, and strong commitment to the profession were highly valued (Kornhauser, 1962). If the control incentive structure in the organization tended to diminish such values, the professionals are likely to experience a loss of intrinsic meaning and pride in their work and adopt an instrumental view of work with its attendant negative consequences (Miller, 1967). Thus, the above theoretical perspective would lead us to the hypothesis that decreased controls and increased professional incentives would result in lesser alienation among professionals. Though sparse, there is support to the above notion in the empirical literature (Aiken & Hage, 1966; Miller, 1967). Here decreased control is manifested by decentralized decision making, participatory supervision and increased professional freedom. The other professional incentives include a favorable organizational climate and encouragement of professional activities.

As for alienation, the literature reveals a variety of definitions. Some used a composite measure of alienation while the others used a single aspect of it. Seeman (1959) identified five dimensions of alienation: (1) powerlessness; (2) normlessness; (3) meaninglessness; (4) isolation and (5) self-estrangement. However, it has been suggested that different independent variables are associated with different aspects of alienation and it would be imprecise to relate all the independent variables to a generic index of alienation (Susman, 1972). Further, it has been argued that self-estrangement defined as a loss of intrinsic meaning and pride in work and as an instrumental view of work is adequate as a definition of alienation in the context of work as it is faithfully derived from the Marxian conceptualization and is regarded as "the master theme in alienation studies than simply a variety of it" (Seeman, 1975: p. 104). Hence self-estrangement is adopted as a measure of alienation in this study.

It has been pointed out recently that comparative inquiry across institutions and societies can contribute greatly to the interrelations of institutions and societies (Lammers, 1978). However, most studies of comparative management neglect Canada completely or treat the English speaking areas of North America as a homogeneous unit, without empirically testing for Canadian-American differences (Thompson & Moore, 1975). Observers of Canadian society have described Canada as somewhat less egalitarian, less achievement oriented and less individualistic, thus leaning toward a European value system and away from American attitudes (Thompson & Moore, 1975). The present study attempts to test this notion as well by comparing Canadian and American engineers in terms of how they perceive the effect of control-incentive structure on their alienation.

## METHOD

The Canadian data were collected from 189 professional engineers who were registered members of the professional engineers association of British Columbia and working as engineers in different organizations within the province. The American sample consisted of 211 professional engineers working for a major aerospace corporation as reported by Miller (1967). In essence, the present study is a partial replication of the original study (Miller, 1967) and Miller's results are juxtaposed with the Canadian results for purposes of comparison. The data collection was through a mail back questionnaire sent to the homes of the Canadian engineers.

Alienation was measured by a five item cumulative scale (Miller, 1967) consisting of items referring to the intrinsic pride or meaning of the engineer's work. The items were:

1. My work is my most rewarding experience.
2. My job gives me a chance to do the things that I do best.
3. I really don't feel a sense of pride or accomplishment as a result of the type of work that I do. (This item was reverse scored.)
4. I very much like the type of work that I am doing.
5. My work gives me a feeling of pride in having done that job well.

The responses were obtained on a four point Likert type scale ranging from strongly agree to strongly disagree. The response distribution for each item was dichotomized between those agreeing and those disagreeing in order to form a Guttman Scale. This procedure yielded a Guttman Scale with the following characteristics: coefficient of reproducibility: .89 (.91); minimum marginal reproducibility: .73 (.70); and coefficient of scalability: .59 (.69). Miller's (1967) values are reported in parentheses. The scale scores were then trichotomized to provide for three levels of work alienation as suggested by Miller (1967). Respondents with a scale score of "0" (37.5%) were classified as *low*, respondents with a scale score of (1) or "2" (43.5%) as *medium* and those with a scale score of "3", "4" or "5" (19.0%) as *high* on the alienation scale.

*Type of supervision* was assessed with the following five items, adapted from Miller's (1967) instrument:

Which one of the following statements most nearly represents the type of work relationship that exists between you and your immediate supervisor?

- (1) We don't discuss things very much and his decision is usually adopted.
- (2) We discuss things a great deal and come to a mutual decision regarding the task at hand.
- (3) We discuss things a great deal and his decision is usually adopted.
- (4) We discuss things a great deal and my decision is usually adopted.
- (5) We don't discuss things very much and I make most of the decisions.

Respondents to statement 1 were grouped as working under a *directive* type of supervisor (14.3%), respondents to statements 2, 3, 4 were grouped as working under *participatory* type of supervision (46.0%), and those responding to statement 5 were categorized as working for a *laissez-faire* type of supervisor (39.7%).

Information regarding *research choice* enjoyed by the engineers were elicited by the following question:

In general how much choice do you have concerning the types of projects or tasks in which you are involved?

The answers were obtained in the following format:

1. Almost no choice
2. Very little
3. Some
4. A great deal

Respondents to answers 1 or 2 were classified as *low* (37.5%) in freedom to choose projects or tasks, those responding to answer 3 were classified under *medium* (30.2%), and those responding to answer 4 were classified as having *high* freedom of choice (32.3%).

The other professional incentives offered by the organization to their engineers were determined in terms of professional climate and company encouragement. A measure of climate was obtained through the following items that were modified from the original Miller instrument (1967) to suit the present sample.

1. To what extent do you agree that the company you work for provides you with many opportunities to obtain professional recognition outside the company?

The response to this item was obtained on a four point Likert type scale ranging from strongly agree to strongly disagree.

2. In general how much of the work you do contributes to your professional development or is in line with your professional interests?

The response to this item was also obtained on a four point scale varying as follows:

1. Almost none
2. Very little
3. Some
4. A great deal

In both the items the responses were dichotomized between scale scores of 2 and 3. The combined score was then trichotomized to indicate three levels of professional climate ranging as *low* (13.2%), *medium* (41.3%) and *high* (45.5%).

Company encouragement was measured through the following three items, two of which were taken from Miller's instrument while the authors composed the third.

1. The Company encourages its engineers to attend professional/technical meetings and conferences.
2. The Company encourages its engineers to further their professional development by attending special lectures or seminars, evening diploma/degree programs at academic institutions, etc.
3. The Company encourages its more experienced engineers to help further the development of the technical competence of engineers with less experience.

The responses were obtained on a four point Likert type scale ranging from strongly agree to strongly disagree and the dichotomy was between agree and disagree. The scores were then combined and trichotomized to indicate *low* (45.5%), *medium* (22.2%) and *high* (32.3%) encouragement.

## RESULTS

The results shown in Table 1 tended to support the hypothesis that a decrease in control and an increase in the professional incentives provided by the organization led to a decrease in alienation among Canadian professional engineers. Thus the present study seemed to validate Miller's findings among American engineers (1967). This could be seen by the negative values obtained for gamma consistently. The measure of association, gamma was used because of the ordinal nature of the variables and for purposes of comparison with the Miller study (Mueller, Schuessler & Costner, 1970).

**TABLE 1**  
**Relationship Between Work Alienation and Control-Incentive Structure:**  
**A Canadian-American Comparison**

<i>Control- Incentive Structure</i>	<i>Work Alienation</i>							
	<i>Canadian</i>				<i>American</i>			
	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>N</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>N</i>
<i>Supervisory Type</i>								
Directive	.48	.41	.11	27	.09	.35	.56	32
Participative	.70	.20	.10	87	.30	.42	.28	90
Laissez-faire	.69	.19	.12	75	.21	.47	.32	80
		Gamma = -.14				Gamma = -.12		
<i>Research Choice</i>								
Low	.60	.27	.13	71	.10	.38	.52	92
Medium	.54	.30	.16	57	.26	.52	.22	89
High	.85	.10	.05	61	.59	.37	.03	27
		Gamma = -.31				Gamma = -.61		
<i>Professional Climate</i>								
Low	.32	.36	.32	25	.16	.31	.53	89
Medium	.64	.27	.09	78	.20	.53	.27	74
High	.79	.14	.07	86	.41	.50	.09	46
		Gamma = -.48				Gamma = -.49		
<i>Company Encouragement</i>								
Low	.56	.29	.15	86	.21	.42	.37	87
Medium	.71	.19	.10	42	.23	.35	.42	60
High	.79	.15	.06	61	.24	.53	.23	62
		Gamma = -.35				Gamma = -.13		



The relationship between organizational control structure and work alienation was characterized by fairly large differences between directive supervision on the one hand and both participatory and *laissez-faire* on the other. There was little difference between participatory and *laissez-faire* types of supervision in terms of alienation experienced. In addition, the changes were appreciable only in the low and medium alienation groups for the Canadian sample. The high alienation group did not perceive any one of the supervisory styles as better than the others. In terms of comparison between the two samples, the strength of association, gamma did not vary appreciably. It was rather low for both samples. However, unlike the Canadian sample, the American engineers exhibited considerably higher degrees of alienation when confronted with directive supervision. In other words, the American sample responded more negatively to directive supervision than their Canadian counterparts.

The relationship between professional freedom measured in terms of research choice and alienation was found to be negative though the relationship was weaker for the Canadian sample compared to the American sample. The pattern was also clearer among the American engineers than the Canadian engineers. The latter did not differentiate between low and medium level of research choice and its influence on alienation whereas in the American case, the differences were more marked.

Among the other professional incentive variables, it has been observed that a more favorable professional climate created a lower level of alienation among both samples. The strength of association between professional climate and alienation was similar in both cases.

In the case of company encouragement and its relationship to alienation, the Canadian sample exhibited a somewhat stronger relationship compared to the American sample. However, the notion that greater company encouragement led to lower alienation was supported in both cases, more strongly for the Canadians than for the Americans.

In general, the data revealed that Canadian engineers experienced a lesser degree of alienation compared to their American counterparts. The relevant correlates of alienation for the Canadian sample seemed to be research choice, professional climate and company encouragement whereas for the American sample, they were research choice and professional climate. The nature of supervision did not seem to be that important for both samples. The above observation offered a qualified support to the notion that differences do exist between Canadian and American values and preferences.

## DISCUSSION

The present study demonstrated that the empirical dimension of Marx's theory of alienation has considerable potential as a framework for studying the phenomenon of alienation. It offers a viable structure for incorporating relevant explanatory factors for the population in question, and provides scope for deriving empirically verifiable hypotheses. The Marxian notion that decreased controls and increased incentives led to a reduction in alienation was found to be tenable for professional samples.

Focussing on specific aspects of the present study, it has been observed that though there were marked differences in alienation between the directive and participatory types of supervision, there was virtually no difference in alienation between participatory and laissez-faire types. A careful examination of the response regarding the type of supervision suggested that the Canadian engineers valued both discussion and decision making and did not differentiate between the two. If the chance for discussing their views with their supervisors existed in the structure of their jobs, they did not seem to attach much importance as to who made the decision. Since this was the point of departure between participatory and laissez-faire types of supervision, the absence of appreciable difference in alienation between the above two categories seems justified.

The results also indicated that among the high alienation group the supervisory style did not make any difference. Perhaps, for this group, as Touraine (1973) observed, alienation results in a deprivation of awareness as opposed to an awareness of deprivation. Comparing both Canadian and American samples one notices only a weak association albeit in the proposed direction, between type of supervision and alienation. An examination of the sample revealed that only 14% of the Canadian and 15% of the American engineers reported to have been under directive supervision. Such a restriction of range is likely to depress the strength of association between the two variables. Hence the results have to be interpreted with caution. The low value of gamma notwithstanding, it was observed that American engineers exhibited considerably higher degrees of alienation compared to Canadians when faced with directive supervision. This seems to tie in with the notion that Americans emphasize values such as individualism and egalitarianism more strongly than Canadians and as a result react in a more perceptible manner, when faced with situations that constrain a fuller expression of them. Such an observation tends to highlight differences between the two groups. Another possible explanation lies in the fact that the Canadian sample was overrepresented by baccalaureate engineers who are somewhat more favorably disposed toward directive supervision as they

look upon it as guidance to do the job right. That is perhaps the reason why 48% of those functioning under directive supervision reported lower degrees of alienation. In the American sample, all the engineers had graduate training in engineering and held Master's degrees. By virtue of their training, they needed less direction and reacted negatively when faced with directive supervision.

In the case of research choice, perceived alienation dropped considerably when the choice was high. There was hardly any difference in alienation when the choice was either low or medium for the Canadian group. This indicated that the engineers valued a *great deal* of freedom of choice concerning their work and anything below was found alienating. They liked to get involved personally in their jobs and an environment that would stifle such involvement was perceived as alienating. The *extent* to which they were stifled did not seem to make much difference. It was also noted that the strength of association between freedom of research choice and alienation among the Canadian engineers were considerably lower compared to the American engineers. This discrepancy is perhaps due to the different nature of the two samples. The Canadian sample consisted of a large number of baccalaureate engineers to whom research was not an important issue whereas the graduate engineers in the American sample were trained in research and perhaps attached a greater value to it. In addition, unlike the American sample which had a wider range in terms of the nature of jobs, the Canadian sample was skewed in the direction of people whose jobs involved management of technical and human resources. Such management oriented jobs have very little scope for research and hence the incumbents are likely to downplay the importance of research choice, perhaps as a dissonance reduction mechanism.

The relationship between professional climate and alienation seemed to be fairly strong and similar for both Canadian and American groups. This finding indicated that the more favorable the professional climate was, the less alienation the engineers felt. In other words, the engineers seemed to value professional recognition outside the company and preferred their jobs to contribute to their professional development. For the Canadian sample, the above relationship was the strongest and for the American sample it was the second strongest. This observation stressed the importance the engineers attached to professional climate as an indication of alienation. The results seem to contradict the observation that engineers had a "local" orientation and did not care much for professional recognition outside the organization (Kerr, Glinow & Schriesheim, 1977; Ritti, 1968).

The relationship between company encouragement and alienation was also found to be negative suggesting that engineers were favorably disposed

toward attending professional conferences, special lectures and the like and were less alienated when their organization encouraged such participation. This evidence also seems to defy previous observations on engineers (Kerr, Glinow & Schriesheim, 1977; Ritti, 1968). Concerning engineers Ritti (1968) argued, "... goals directed outward, toward establishing a reputation among fellow professionals through publication and participation in society meetings — the cosmopolitan goals — were least important of all. Identification with the profession was much weaker than identification with company". The reason suggested for this attitude among engineers was that their career development and advancement are tied to activities within the company as opposed to scientists whose advancement depends on reputation established in their respective professional association (Ritti, 1968). Here one should note that the above statements referred to engineers in the United States where membership in a professional association was not mandatory to function as an engineer. However, in Canada, the structure is somewhat different in that all engineers are expected to join the professional engineers association is mandatory for most engineering jobs and an engineer's mobility is seriously hampered if he or she does not belong to the professional association. The above situation presumably has created a different value system among engineers in Canada, one that is patterned around the professional association and the activities related to it. The higher strength of association between company encouragement and alienation among Canadian engineers compared to the American engineers could also be explained in the light of the above argument. Such encouragement was more relevant to the Canadian engineer's career development than perhaps for his American counterpart. This argument also adds strength to the observation that Canadian and American samples should not be treated as if they were an undifferentiated mass.

The present sample did not provide a wide range with respect to education, and the nature of jobs. The Canadian sample was over represented by baccalaureate engineers who were involved in the management of technical and human resources. The scarcity of engineers with advanced training could be attributed to the less sophisticated nature of the technological demands among Canadian industry especially in the province of British Columbia and the slower rate of technological growth in Canada compared to the U.S. (Chenery, 1960). The reader should also bear in mind that the Canadian sample was restricted to the Province of British Columbia and might not truly represent Canadian perceptions due to possible regional variations. Thus a wider and more representative sampling is recommended for future investigations of Canadian-American differences. Further temporal difference between this study and the Miller study (1967) could not also be ruled out as a possible reason for the discrepancies in results between the two samples.

Although the study reported here is of modest proportion it provides some empirical support to the Marxian proposition that decreased control and increased professional incentives bear a negative relation to alienation. The findings were helpful in discriminating between the more alienating and the less alienating aspects of the control-incentive structure of an organization, so that they could be altered in order to minimize the experience of alienation among its professional members. By concentrating on a single occupational group, we were able to gauge the impact of control-incentive structure on alienation more precisely. It is believed that this research is a step toward a better understanding of the impact of organizational factors on alienation though "a great deal of conceptualization and empirical research remain to be done before these relationships are clearly understood" (Susman, 1972: p. 45).

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## Comparaison sur l'intensité de l'aliénation parmi les ingénieurs canadiens et américains

Le concept d'aliénation, tel qu'on l'utilise couramment en sciences sociales, peut se rattacher à deux traditions théoriques: la théorie de l'aliénation exposée par Marx et la théorie de l'anomie établie dans les travaux de Durkheim. Toutefois, la tradition marxienne a exercé une influence plus marquée en ce qui a trait à la substance même de l'aliénation et aux périmètres de la recherche sur le sujet. La dimension historique et empirique de la théorie de l'aliénation chez Marx comporte des exemples de situations antérieures comme des salaires inéquitables, des conditions physiques et psychologiques inhumaines consécutives aux exigences des employeurs et du monde des machines qui conduisent à un état d'aliénation.

En particulier chez des hommes de profession, des facteurs comme une science spécialisée au contenu intellectuel considérable, une grande autonomie d'action, la responsabilité, l'influence et un engagement marqué envers la profession sont vivement valorisées. Si la structure de contrainte ou de stimulation au sein d'une entreprise tend à amoindrir de telles valeurs, les hommes de profession peuvent en arriver à ressentir une privation du sens et de la fierté dans leur travail et adopter à son endroit une attitude de laisser-aller avec toutes les conséquences qui en découlent. Ainsi, la perspective théorique précédente pourrait inciter à formuler l'hypothèse selon laquelle une contrainte moins forte et une stimulation plus grande auraient pour résultat de diminuer l'aliénation ressentie par les hommes de profession. Dans la pratique, une contrainte moins forte se traduit par la décentralisation des prises de décision, la participation à la supervision et une liberté professionnelle accrue. Les autres stimulants professionnels sont le climat au sein de l'entreprise et l'appui accordé à l'activité professionnelle. En ce qui a trait à l'aliénation, on a soutenu que l'insatisfaction personnelle, définie comme la privation du sens et de la fierté dans le travail et une attitude de laisser-aller à son endroit, est une définition adéquate de l'aliénation dans un contexte de travail tel que la chose ressort fidèlement de la conception marxienne et que, en conséquence, elle doit être considérée comme l'élément principal dans les études sur l'aliénation beaucoup plus que simplement l'un de ses aspects. Aussi, l'insatisfaction personnelle a-t-elle été choisie comme mesure de l'aliénation dans la présente étude.

On a également signalé récemment qu'une enquête comparative au sein des institutions et des sociétés peut favoriser beaucoup les interrelations entre elles. Cependant, la plupart des travaux qui font des comparaisons entre les employeurs de différents pays négligent totalement le Canada et considèrent les milieux de langue anglaise qui vivent en Amérique du Nord comme une unité homogène sans noter les différences entre les conditions canadiennes et américaines. Les observateurs ont présenté la société canadienne comme une société moins égalitaire, moins tournée vers la conception et moins individualiste que la société américaine, la première s'appuyant sur le système européen des valeurs et s'écartant des attitudes américaines. La présente étude tente de vérifier cette affirmation en comparant les ingénieurs canadiens et américains quant à la perception qu'ils ont de l'effet de la structure de contrainte ou de stimulation sur leur degré d'aliénation.

#### **La méthode suivie**

Les données canadiennes ont été obtenues de 189 ingénieurs qui étaient membres de l'Association des ingénieurs de la Colombie Britannique et qui travaillaient pour diverses entreprises de la province. L'échantillon américain, extrait d'un travail de Miller, regroupait 211 ingénieurs qui oeuvraient au sein d'une grande société aérospatiale. Fondamentalement, le présent travail est une réplique partielle de l'étude initiale de Miller et les résultats sont juxtaposés aux résultats de l'étude canadienne aux fins de comparaison. Les données furent recueillies au moyen d'un questionnaire envoyé par la poste à la résidence des ingénieurs canadiens. Les variables spécifiques utilisées dans l'évaluation du degré d'aliénation consistaient dans le type de supervision, la liberté de s'adonner à la recherche, le climat professionnel et les encouragements de la part de l'employeur. Les échelles de mesure sont celles qu'on retrouve dans l'étude de Miller.

#### **Les résultats obtenus**

L'étude a démontré que la dimension empirique de la théorie d'aliénation de Marx a beaucoup de valeur comme fondement d'une analyse du phénomène d'aliénation. Elle offre une armature sérieuse pour comprendre les facteurs explicatifs pertinents au groupe observé et elle permet de procéder à la vérification empirique de diverses hypothèses. La notion marxienne, en tenant compte de la diminution des contraintes et du développement des stimulations, permet un amoindrissement de l'aliénation de même qu'elle apparaît soutenable quand on l'applique à des groupes professionnels.

En outre, les résultats obtenus ont révélé que les ingénieurs canadiens se sentent moins aliénés que les ingénieurs américains. Pour les ingénieurs canadiens, l'impression d'aliénation semble porter sur la liberté de s'adonner à la recherche, sur le climat professionnel et sur le soutien qu'ils reçoivent de l'entreprise. Tandis que, pour les ingénieurs américains, elle est imputable à la liberté de s'adonner à la recherche et au climat professionnel. Cette observation accrédite l'idée qu'il existe une différence entre les valeurs et les préférences des Canadiens et des Américains.

Bien que l'étude dont il est rendu compte soit de caractère modeste, les résultats sont de nature à favoriser la distinction entre les aspects les plus et les moins susceptibles d'engendrer l'aliénation dans une structure tendant à favoriser les contraintes ou les stimulations à l'intérieur d'une entreprise de telle sorte qu'il est possible de les

modifier si l'on veut diminuer l'impression d'aliénation chez les ingénieurs. En restreignant leurs investigations à un seul groupe professionnel, les auteurs furent en mesure de jauger plus précisément l'impact d'une structure contraignante sur l'aliénation. On peut considérer que cette recherche, envisagée d'une façon surtout conceptuelle, est un pas vers une meilleure compréhension de l'effet des facteurs d'aménagement sur l'aliénation d'où il reste à poursuivre cette recherche empirique avant qu'on puisse en comprendre clairement les fonctions.



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