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Centering the Margins

The realities and possibilities of industrial design in Canada

by

Alan Boykiw, B.I.D.

A thesis submitted to
the faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of

Master of Arts

School of Canadian Studies

Carleton University
Ottawa, Ontario
March 1, 1993

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possibilities of industrial design in Canada"**

**submitted by Alan Boykiw, B.I.D.
in partial fulfilment of the requirements for
the degree of Master of Arts**

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**Director
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April 1993**

ABSTRACT

The lack of use of industrial design by Canadian manufacturers is understandable when the realities of the Canadian industrial milieu are considered. The development of the industrial design profession in Canada did not find its roots in the way people made or did things but was born in an atmosphere of attempting to educate people about design through exhibits and political initiatives. The significant foreign ownership of Canada's productive instruments and intellectual property has resulted in potential design work being transplanted to home offices, primarily in the United States. The sheer size of the country and its regional heartland/hinterland economic structure has also discouraged the development of sustained design and manufacturing activity. The lack of power in the international trading arena has further contributed to the erosion of Canadian manufacturing initiatives and, hence, the need for industrial designers. Ineffective legislation regarding industrial design and property rights has contributed to the profession's marginality in both physical and psychological terms. The realities of the relatively small size of Canadian businesses and the lack of funding promoting the use of industrial design have continually plagued the profession's involvement in Canadian product development programs. Most importantly, industrial designers in Canada need to understand that they are not practising in Europe where craft-based techniques evolved into high-volume manufacturing and quality-conscious domestic consumers. This will require the development of an indigenous industrial design spirit based on the unique characteristics and the situation of Canadian industry within the emerging international market-place.

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INTRODUCTION

Since the beginning of trade, travel, and association, societies and cultures have been identified by the objects and tools that they have developed. In modern times political regions have also become known for particular achievements or expertise. When one thinks of Japan, high technology products come to mind. A sleek lamp or fancy shoes might be associated with Italy, teak furniture with Denmark or crystal with Sweden. Object association with Canada is not immediately apparent. Discussion of the issue amongst industrial designers centers around our resource based economy as the reason Canada's identity is undeveloped. This observation tends to leave the Canadian design and manufacturing communities in a state of mental and financial depression. Why is industrial design revered in most industrialized countries but remains a secret in Canada? Why does the profession need to be sold to manufacturers when international success stories praise the value of using industrial designers in product development programs?

This inquiry exposes the industrial design profession's marginality within the underdeveloped Canadian manufacturing sector. The notion of industrial design as a link between customers and industry is examined, highlighting the fact that this value adding profession has not been exploited and remains marginal within the context of Canada's industrial infrastructure. Early government policy decisions are traced that have hindered the growth of the sector. Also, decisions that were made in dealing with the emergent regions of the country have contributed to a fragmented domestic market. This has hindered the necessary growth of Canadian enterprise that is necessary to achieve the scale required to be able to compete internationally. Canada's involvement in the international trading sphere is examined with regard to the effects of the General Agreement on Tariffs and Trade (GATT) and the Free Trade Agreement with the United States. The infirmity of Canada's position within these agreements is a prelude to the discussion of the effects of

intellectual property legislation and the issue of the significance of the foreign ownership of Canada's productive instruments. The nature of Canadian business and applicable government programs are examined with a view that the synergy that should exist between these bodies has not been developed. Also, there are autochthonous qualities of the Canadian manufacturing sector that need to be included in policy discussions. Hiding the above areas of influence leads to ineffective conclusions regarding Canada's dependent state and hinders useful public policy formulation and private sector endeavors both in the industrial design and manufacturing communities.

Industrial design has the potential to contribute in a positive way to the development of a productive manufacturing sector which is not dependent on ventures of foreign initiative, and development assembled in Canada. I believe that this inquiry into the characteristics of the state of the industrial design profession within the Canadian manufacturing sector is paramount in establishing the principles of producing products of indigenous vision made in, and for, Canada.

INDUSTRIAL DESIGN IN CANADA

In March 1991, the Department of Communications and the Department of Industry, Science and Technology of the federal government released a consultation document on Canadian design as an initiative toward a national design policy. Such a policy is integral to the pursuit of manufacturing efficiency. The introduction states that "the Canadian government has a role to play in strengthening Canadian design in view of its impact on the Canadian cultural identity, the competitiveness of firms and the global economy of the country."¹

Furthermore, the federal government's pursuit of design promotion and development strategy states that:

Design is a form of Canadian cultural expression and an important tool of *promotion of the Canadian identity*. It is also an essential element of increased competitiveness for most of our industry sectors. The Canadian government, within its mandate of strengthening the nation, should adopt policies and programs aimed at supporting the flourishing and development of design at all stages, from conception to production and from distribution to consumption.

In this regard, a design promotion and development strategy would allow the Canadian government to contribute in the affirmation of the Canadian cultural identity as well as to *ensure the economic future of our industrial base*.²

Admittedly, the document is a consultation instrument in pursuing formulation of policy. However, it is strangely lacking in any attempt to address the established patterns and realities of the technological and industrial underdevelopment that are particular to Canada. Its bias assumes an economy that finds its strength in the manufacture and export of goods

which is not the current Canadian reality. In fact, what will be seen is that the industrial design profession in Canada needs to redefine its role within the Canadian economic landscape if it is to contribute to the growth of the manufacturing sector. The analysis is not complete without a closer look at the profession itself and what constitutes its figure within the Canadian landscape.

Industrial design is a creative activity, the aim of which is to determine the formal qualities of objects produced by industry. These formal qualities include the external features, but are principally those structural and functional relationships that convert a system to a coherent unit, both from the point of view of the producer and of the user.³ Obviously there is an immediate problem with any definition of design in that there is considerable confusion with regard to the word itself. Not only is it a noun such as in "the design" is beautiful but it is also used as a verb: "to design" something. It is also an adjective when used in the way of calling something that is marketed as being from a designer such as "designer jeans" or "designer wallpaper". John Thackara sees this image as unfortunate:

[T]he prefix 'designer' has become in some cases a byword for unsympathetic, artificial and over-controlled environments, or a marketing device used to sell poorly conceived, over-priced goods. The design of today's consumer, leisure and service enterprises and products is technically proficient, but it is also manipulative and aesthetically bankrupt. And people are rebelling against it.⁴

A sometimes forgotten aspect of the term "industrial design" is that a design will be produced by industry whether there are industrial designers or not.⁵ In fact, industrial designers are totally dependent on the fact that somebody is going to make something. The profession of industrial design, by any definition, has no *raison d'être* except as Henry Dreyfuss said 'to be the extra pair of eyes of industry.' In most industrialized countries,

the profession is a valued supplement to the products of industry. Industrial designers have the skills to add value or formalize an idea or system with attributes to better satisfy all those involved: the manufacturer, the consumer and in most cases society.

In Canada, the profession is not known nor easily explained to people that are not involved in the manufacturing area. It is very obvious to people what you do if you tell them that you are a banker or a lawyer or a doctor. Industrial designers are mistakenly thought to do anything from arranging factory floor layouts to making sure assembly lines run properly. The results of a survey of manufacturers emphasized this point in establishing that the role and boundaries of an industrial designer are not clear at all.⁶ Some firms reported industrial design staff as high as 100 employees. In contrast, one of the largest corporate industrial design offices in Canada, Bell Northern Research (Ottawa) lists a total of eleven industrial designers in design or management roles. The 274 survey respondents cumulatively suggested that there are 3 to 4,000 industrial designers employed in Canada. This estimate is suspect when one examines the pool of post-secondary school graduates. The Bachelor of Industrial Design program at Carleton University has graduated 260 industrial designers since its inception in 1976. College or university graduates majoring in industrial design might double this amount of people actually engaged in the profession of industrial design in Canada, a far cry from the thousands purported to be practicing. 50 per cent of the respondents reported that they did not know what industrial designers did which truly emphasizes the point that not only is industrial design misunderstood by those that manufacture, it does not even exist as a concept in the minds of half of them!

Part of the problem with definition could be that "design" has a multiplicity of meanings such as industrial design, graphic design, software design, interior design, and floral design which all share a process of designing but are all mutually exclusive of each other in their media. Consider also the term "industry" and you realize that the confusion is

compounded by the fact that we call all types of commerce in North America "industry" such as the software industry, the hotel industry, the automobile industry, and the tourist industry. The term "industry" and specifically "industrial", gained wide recognition in the late 18th century when it preceded the word "revolution" to describe the mechanization of making things. The application of the word to "designer" does not seem to make a lot of sense to the Canadian public or industry. Although recognition is part of larger issues, possibly the term "product designer" might be a more appropriate term.

Irregardless of the terminology it will become clear that the concept of designing for industry does not find the same roots in Canada as one finds in Scandinavia, Germany or Italy. The roots of industrial design in Canada have been described as political in nature which is certainly not part of the conscience of self-determination. Attempts to promote and institutionalize industrial design by government in the period 1948-1960 are well documented by John Bruce Collins and are worth reviewing for their philosophical underpinnings.⁷

Design by government

The formation of an awareness of industrial design in Canada coincided with the Second World War. The country's industrial capacity had doubled in support of the War so there was considerable planning and dedication required to re-orient the processes and manufacturing methods toward peacetime conditions and prosperity.⁸ In 1944, The House of Commons Special Committee on Reconstruction and Reestablishment heard from sixteen arts organizations, eight of which declared that industrial design was an important element of reconstruction and deserved government support.⁹ The Committee recommended government support for industrial design making the observation that

Within the past quarter century Sweden projected an idea through a national slogan: "Art in everyday things"....In Denmark the government activated her industries by subsidies to manufacturers for the specific purpose of promoting original design as a national asset....Through *similar government encouragement* in Canada, with her vast natural resources, could achieve a proud culture as well as a unique world position in industrial development and export.¹⁰

Although the recognition that industrial design could be a useful tool to industry was encouraging, it is clear that the profession did not grow on its own merits in Canada. The view of the European model of government intervention was taken at face value with no understanding that interest in industrial design in Europe developed out of cultural and social traditions. Collins suggests that part of this tradition evolved from a deep concern "with the effect of machine production on the quality of life". In this regard, the evolution of the craft or guild-based economy in Europe created a particular environment for the natural evolution of industrial design within a society that had a notion of what design by industry meant. In Canada, craftspeople have virtually "been damned by the very materials they use. Media such as clay, glass and textiles are seen as archetypal craft media and people who work in them are automatically regarded as non-intellectual...[They are] perceived as rural, reactionary, hidebound, skill-orientated and rooted in the ethics of toil and conservatism."¹¹

The Scandinavian countries, that conquered the world in terms of their ceramics, appliances, and furniture in the 1960s and early 70s provide a good example of the notion of an indigenous development of design awareness.¹² Before the War, Scandinavia (Norway, Sweden, Denmark and to a lesser extent Finland) had very strong labour unions that were supported by the state (1930s). They were insistent on maintaining control over the people and therefore the fortunes of the output of the country. It was important for the

leadership to maintain control over their membership otherwise mobilization for any cause would not be possible. The unions introduced public adult education (volks university) in conjunction with the craft associations that already existed. The unions recognized that the crafts association members, who were already organized, could be mobilized to educate others in the long winter nights. They posed their new ideas of the Bauhaus on the workers (they were between the ages of twenty to forty) who were eager to be part of this new education.

The ideas of the Bauhaus introduced innovative approaches to industrial output by methods of manipulating the elements of shape, form and colour which meshed well with the legitimate concerns that the people had about the effects of mass production on their lives. These new ideas were possibly seen as a way of maintaining authority over the mechanization of their crafts.¹³ These workers became highly educated in terms of craftsmanship, qualities of products and other Bauhaus ideas. By the end of the Second World War, these workers were now thirty to fifty years old and were the main consumers and manufacturers in the home market. They were conscious of quality as a major market factor and therefore the manufacturers had to cater to their demands for quality. Manufacturers that didn't produce quality goods did not survive. It is interesting to note that this educated group of consumers did not include the élites who were not part of the education process. It was not uncommon to walk into a labourer's home and find quality goods in a sparsely furnished flat as opposed to the plethora of goods that were not purchased with the same criteria of quality in the homes of the élites.

The story has a folksy air, although it was nationalistic and politically motivated by the unions, in that it smacks of solid wood and a pure ideology of design that grew out of a craft based 'making' society. The resulting educated or aware consumers were not created by legislation, nor did they have to be sold on the idea that design was the way to industrial

prosperity. A way of thinking had developed as an indigenous part of the manufacturer/consumer relationship represented by the products that were produced and consumed.

This idea of design being within the vocabularies of consumers and producers alike is supported by international reaction. For example:

Denmark had the good luck of being canonized back in the 50s as the Land of Excellent Design. Why? Because some of our furniture was outstanding. Our home furnishings traditions were widely publicised as a symbol of sound Nordic thinking and a source of inspiration for the rest of the world. Designers were flocking to our country to find the truth. And our home furnishing industries were thriving...¹⁴

It is important to emphasize that it was necessary for both industry and consumers to be sharing the same terms of product attributes for industry to successfully satisfy the demands of the consuming public. Much of the furniture that was consumed by the home market, and then the world, was teak and commanded a fair price. A respected furniture manufacturer commented that "the whole thing seemed a bit ridiculous".

Although his company was successful in this era, in hindsight he felt that making twenty prototypes of a chair over four years to make sure a product was right for the demanding consuming public had been taken to extreme. If his company didn't do this however, he could be sure that one of his competitors would. This was the atmosphere that was prevalent in the domestic market. This attitude of ensuring quality in production was taken up in all areas of consumer products by Scandinavian companies. In contrast, Canada's domestic marketplace did not develop in these terms and the industrial design profession had no basis for evaluation from a cultural base.

Collins suggests that the support for industrial design in Canada was heavily influenced by the promotion of the profession in the 'American way', by having faith in free enterprise.¹⁵ The lack of a tradition-based rationale for the existence of industrial design resulted in selling the notions of design rather than a concurrent producer/consumer evolution. The Museum of Modern Art (MOMA) in New York City was seen to be the 'way' of promoting industrial design through public exhibits and considerable publications programs. Beginning as early as 1939, these programs developed to the point of celebrating contemporary American designers who "falsely streamlined stationary objects, such as staplers and pencil sharpeners, to imitate the aerodynamic fashion of trains and automobiles".¹⁶

The National Industrial Design Committee was established in this time of significant American influence on both Canadian industry and government (1947).¹⁷ Its formation also coincided with increasing pressure on the government to formulate policy with regard to an export strategy, particularly in response to the implementation of the Marshall Plan by the United States which made it imperative that Canada acted to ensure its future in the international trading sphere.¹⁸ This potential prompted C.D. Howe to make the following observation:

Now that the first great spurt of post-war buying has lessened, consumers, having satisfied immediate wants, are becoming more and more discriminating in the choice of commodities they buy. To meet such rising standards of taste, mass-produced articles, besides being durably constructed, need to be both good to look at and convenient to use. In our export trade, in particular, good design is related directly to the economics of marketing. We must be realistic and face the fact that it is superior design which is helping, in many instances, to sell these new European products in competition with our own goods.¹⁹

Although industrial design was seen as a possible economic tool for enhancing exports, its usefulness was often confused with its relationship with the arts and its promotion through art galleries. This condition of philosophically drifting between art and industry compounded the question of whether or not design should be funded by the public purse in the manner of much of the arts or be left to the initiatives of industry and the private sector. This problem of place compounded the lack of knowledge about the meaning of design as a result of an uneducated manufacturing and consuming infrastructure, contrary to the Scandinavian experience. Hence, for much of its existence, the NIDC was dedicated to raising public awareness of art, taste and design in general.²⁰

The NIDC did attempt to gain support and credibility from industry, primarily by introducing the "Design Merit Awards to Industry" in 1953.²¹ The certificates were awarded to manufacturers in hopes that industry would 'discover' design and utilize designers services in pursuing top honours.²² Actually, the selection requirements for the Awards truly reflected the makeup of the Canadian economic landscape. In an eerie coincidence with the realities of the manufacturing sector a product only had to have a 50 per cent Canadian content in terms of the total cost of manufacturing to be eligible.²³ This not only recognized the reality of the Canadian branch plant economy but also complemented the federal government's policy of encouraging direct foreign investment and ownership. Several American companies won design certificates for products that had been designed and manufactured in the United States and assembled in their Canadian branch plants, the cost of labour making up a part of the 50 per cent Canadian manufacturing content.²⁴ In 1956, without a single exception, all awards for washing machine design were given to foreign firms.²⁵ At the same time that the Gordon Commission was reporting on the high level of foreign ownership and the resulting lack of self-determination for Canadian industry, Canadian manufacturers were being told that their designs did not stand up to American products. They were also told that American designs

were accepted into the awards program as examples to Canadian manufacturers of the standard of design required for the Design Awards.²⁶ Not only did this policy encourage foreign ownership, it also rewarded it. Canadian industrial designers could only watch as the design of award-winning products was carried out in the home offices across the border.

In 1961, The Industrial Design Act was passed which founded the National Design Branch of the Department of Trade and Commerce and the seventeen-member Design Council. In some years the Council was primarily made up of non-design people. The industrial design community often felt that the Council members were only political appointees or given the position as a perk so that they might travel to Banff for instance, for a meeting of the Council. There were occasionally members of the design community on the Council but the primary reason for existing as a council clearly did not find its roots in design or in the passion of making things. It was a common joke at cocktail parties to wonder why one was there as a non-design person. "Who were these design people anyway?" was overheard by a designer attending one of the meetings.²⁷

In 1963, industrial design found itself placed under the Department of Industry which had a mandate of assisting Canadian industry to gain increased competitiveness.²⁸ The move is significant in that the focus of design promotion officially shifted from a gallery mentality to a promotion of design as an integral component of industrial production. This shift did not really change matters as design awareness and education continued to be a priority. The Council offered research grants and scholarships, produced newsletters, lecture series and publications, compiled a design index and gave annual awards.²⁹ The efforts of the 60s culminated in Expo 67 which "banded design types together in a visual representation of what was possible if creative pursuits were taken".³⁰ As the world waited for the products and achievements that were paraded at Expo, the design community realized that it

'was' just a show and that the foreign-owned Canadian manufacturing infrastructure would not support the promises or the premises of the federal government.

In the 1970s, designers and bureaucrats alike seemed to be exhausted by the deflation of the dreams that had been promoted by the 'show' of 1967. The general mood and the reality was well described by Carl Pollock, the Honorary Chairman of the Board of Electrohome Limited who said that:

[I]n Canada, it is apparent that design is underdeveloped. Regretfully, the design work embodied in the preponderance of Canadian manufactured products originates not in Canada but in offices beyond our borders. The Canadian subsidiaries of companies with head offices in other countries—as well as many Canadian-owned enterprises—have for years been content to buy, beg or borrow the creative work of others. While Canadians have prospered economically by employing such second-hand creativity, we have not developed a self-sufficiency which allows us to lead, or compete successfully in world markets with products of Canadian design. Such short-sightedness has surely been selling our birthright to others for their use.³¹

Interviews in the Design Council newsletter from the early 70s revealed much of the same sentiment. "It is not sufficient to have plants that assemble or otherwise make products of imported design by following instructions from imported engineering drawings and product specifications."³² Or, consider this comment from an award-winning designer clearly ringing with disillusion:

...most of the Canadian companies that would have used industrial designers for long-term product design have already done it, or sold out to American companies which are hardly going to favour Canadian designers at the expense of design staffs in the U.S. offices.³³

The newsletter itself seemed to be aimed at the converted few within industry, government and the profession and were hollow and lacking in any depth. Commenting on the National Design Council's first annual report in its 14 year history, Charles Lynch, a well known political syndicated columnist, noted that the Council needed to more clearly define its purpose and if it failed to do so, it would not be able to justify its existence.³⁴ Lynch observed that:

The trouble with the Design Council is that it's never been able to clarify its terms of reference on the meaning of the word 'design'. The current line of thinking seems to be that 'design' includes everything, so the annual report spreads itself thinly over the entire spectrum of human and government activity. The result is blah.³⁵

Design Canada, which was established as the executive arm of the Design Council in 1976 did not help to narrow the definition of 'design' either. It remained a generally ineffective body representing industrial design within the federal government. The body's greatest achievements in this period were in the area of education. \$200,000 was allocated towards starting a Bachelor of Industrial Design (BID) program at Carleton University in Ottawa. Design Canada also continued to be a broker for grants toward graduate studies of design in foreign locations. It had been the premise that these students would bring knowledge back to Canada that would contribute to the kindling of Canadian industry. One recipient recently remarked that he was appreciative of the funding as it helped him achieve his goal but did not feel an obligation to rush back to Canada as opportunities presented themselves elsewhere (New York).³⁶

Design Canada also instituted a Design Awards program in hopes that the Awards would stimulate the Canadian consumer to purchase well-designed goods and that manufacturers would be encouraged to utilize design on a regular basis. A product that had won a Design

Canada award added no cachet at the sales counter either at home or abroad. Manufacturers seldom, if ever, promoted a product as being a prize winner.³⁷

Another effort in promoting design within the manufacturing sector was the Industrial Design Assistance Program (IDAP). This program allowed manufacturers to have up to 50 per cent of the project's cost funded and resulted in a significant number of requests for qualified industrial designers. As mentioned earlier, the program did have its drawbacks and was eventually phased out. Design Canada itself was closed down by the Mulroney Conservative government in 1985, ending any relationship between the government and the value adding profession of which so many countries have taken advantage . It was not possible for the body responsible for the promotion of design to justify its existence in the face of pressure to cut government spending.

Gone were the days when a federally funded body, the National Industrial Design Council, would attempt to give every school child in the country a working knowledge of what constitutes good design....The generation of consumers who had gone to school in the mid-1950s had not become the aware consumers [that the Council] had hoped....The Canadian consumer never became a fervent purchaser of good modern design.³⁸

The question that lingers is whether or not it is possible to educate people about design, assuming that this is appropriate.

Design and the Canadian consumer

Design is not an easy concept to understand nor is it an easy concept to teach to people. The desire to generally educate the public about design and manufacturing was obviously one of the pitfalls of Design Canada objectives. The public could be educated about the issue of

product quality enroute to developing an intelligent or informed home market.³⁹ Then later it could be mentioned that part of the product's qualities or value comes about as a result of the process of design. As long as people fail to distinguish between products on the basis of qualities then the concept of design will always fall short. In this concept, the quality of a product is a quotient of the values of a product divided by the price. This gives rise to the adage of value for the money, hence a preceived quality. A product that is very inexpensive could in fact be of a very high quality. It could also be said that the higher the price the more intrinsic value that product must have in order to be considered having quality. Higher quality does not necessarily mean that all consumers will automatically buy a particular product. The notion of striving to produce quality goods does guarantee consideration of the values and the elements necessary to be competitive. Manufacturers and consumers alike need to be able to understand the vocabulary associated with quality in order to be able to begin to understand the values that are added by the profession of industrial design. These values may be in the shape, or the durability, or the usability of a particular product and it is up to the design community to promote these notions. The key phrase that was flouted by Design Canada was "design awareness". This is a good thing for manufacturers and educators but it is nonsense for the public. "Quality awareness" might be a more appropriate term or initiative for education.

As an example, the short takeoff and landing planes that Canada produced and the agricultural implements that Canada manufactured were of high quality. They were durable, reliable and sturdy. It seems that there is no reason for there to be more Canadian goods of this typology, irrespective of the fact that our economy did not evolve from a craft base. It seems that the market, however, will bear poor quality goods which a manufacturer can't totally be blamed for. If manufacturers can save ten cents on a product without reducing its retail value then they will do so for they are primarily in business to make money. Is it up to the consumer to tell them otherwise? In a free market economy

this is supposed to be the case. It seems that the concept of finding something for the cheapest price is an integral part of the Canadian consumers' psyche. Witness the advertisements of goods which stress price advantage rather than the issues of value mentioned earlier.

In Canada, furniture manufacturers tend to advertise cost savings and don't concentrate on the values that furniture might have.⁴⁰ It is not uncommon to hear about "*Don't pay a cent*" events or "*Rock bottom prices*" or "*We will not be undersold*". This is in contrast to the Swedish company Ikea which has always sold its cost-conscious products on the merits of their designs and durability testing. The front of their 1993 catalogue subtly advertises dreams, ideas, quality and value. These are the notions that attract people to Ikea. Goods are not necessarily cheaper at Ikea, but they are sold as quality items that have value. In fact, in some cases the furniture isn't of high quality at all which hasn't seemed to deter Canadian customers.

When things are made cheaper, there is always an effort to make them look like they are worth more. The most common response or method of doing this is to make things shiny. This is seen to counteract cheapness which is not to be confused with inexpensiveness. Chrome on North American cars is a good example although the chrome in this case is also used to hide manufacturing imperfections, edges, and intersections of materials and planes. Large and small appliances alike also exhibit this desire to have something shiny with chrome accents and details that really don't add any value at all to a product. The notion of 'Euro-look' appliances strengthens this notion as appliances in Europe are generally not adorned with shiny bits and find their aesthetic qualities in well resolved fit, finish and formal material transitions. Because of this attention to detail or the value of sophisticated formal treatment and the fact that appliances for making things clean should look clean, the appliances are often mono-chromatic, usually white, hence the term white goods. The

concept of shiny things being attractive to North Americans may not be a new one as the indigenous peoples were often enticed into trading for shiny objects by European explorers. However, the concept of shininess does seem to be totally opposed to the pioneer attitude of creating things of natural materials that were solid, well made and generally constructed so that they would last.

Perhaps the notion of cheap products being acceptable finds its roots after the Second World War when there was money to be spent on goods that satisfied wants more than needs. Canadian attitudes about possessions or goods may have been divorced from personal attachment, being items for consumption rather than thoughtful extensions of themselves. Perhaps the acquisition of goods became a case of having the opportunity to purchase a lifestyle which did not require much effort in understanding their values. Consider the Dutch word "hebbedingetjes" which loosely translated means 'to have small things'. In Holland, people like to have items in their homes that mean something or that have stories behind them. They may have them for the single reason that they cherish them. The typical North American home is adorned with gifts or commercial objects that aren't necessarily cherished nor do they have any stories or connections behind them. In fact companies and individuals have made tidy fortunes as a result of the North American desire for a style. An extreme, but good example is given by Witold Rybczynski in describing the decoration of people's homes in North America according to the style prescribed by Ralph Lauren of *Polo* fame:

And how does Ralph Lauren intend to dress the modern home? The line of furnishings- it is called a Collection- provides everything needed to decorate the home. The Collection is meant to be, in the words of Lauren's publicists, a total home environment... You can now be part of the ad.⁴¹

This tends to be contrary to the more holistic approach of surrounding oneself with objects that have personal meaning rather than being a reflection of commercial manipulation. In *Survival*, Margaret Atwood refers to literature as a mirror, a map and a geography of the mind.⁴² When Canadians look at their manufactured environment they realize that the reflection is not their own and that "there exists the possibility that the cultural integration into continental American life has proceeded to the point where Canada no longer is a meaningful national community."⁴³

Not only does this have a lot to say about our importation of manufactured goods but it is also a reflection of the inability of the Canadian manufacturing community to break out of its undeveloped mould. The characteristics of the domestic milieu begins to explain why industrial design is not an integral part of Canadian manufacturing methodology. What will become even more apparent is that the discussion of industrial design's place within this community is affected by the realities of the Canadian industrial infrastructure.

Endnotes

¹Canada, "Consultation Document: Canadian Design" (Ottawa: Presented by The Department of Communications and The Department of Industry, Trade and Commerce, March 1991).

²Ibid., 4.

³As defined by the International Council of Societies of Industrial Design.

⁴John Thackara, "Beyond the Object in Design", *Design After Modernism*, Ed. James Thackara (London: Thames and Hudson, 1988), 22.

⁵The following concepts are as a result of discussions with Wim Gilles, the founder of the Bachelor of Industrial Design at Carleton University and a well-respected member of the international design community.

⁶Canada, *National Industrial Design Survey: Demand Side* (Ottawa: Industry, Science and Technology, 1989).

⁷John Bruce Collins, *Design For Use, Design For The Millions: Proposals and Options of the National Design Council: 1948-1960*, An unpublished thesis submitted to the Faculty of Graduate Studies and Research, Carleton University, Ottawa, 1986.

⁸Ibid., 2.

⁹Ibid., 12.

¹⁰Canada, House of Commons, Special Committee On Reconstruction And Reestablishment, *Minutes of Proceedings and Evidence, No. 10, Wednesday, June 21, 1944*, Ottawa, 1944, 331, as cited in Collins, *Design For Use*, 16, emphasis added.

¹¹Peter Dorner, "The Ideal World of Vermeer's Little Lacemaker", *Design After Modernism*, ed. James Thackara (London: Thames and Hudson, 1988), 141.

¹²Information regarding the following European example was provided by Willem Gilles by interview on September 1, 1992.

¹³The most complete account of the development and effects of the introduction of mass production technology is documented by Siegfried Giedion in the classic *Mechanization Takes Command, a contribution to anonymous history*, first published by Oxford University Press in 1948, reprinted by Norton Library, New York, 1969.

¹⁴Jens Bernsen, *Design: The Problem Comes First* (Copenhagen: Danish Design Council, 1983), 6.

¹⁵Collins, *Design For Use*, 3-5.

¹⁶Ibid., 4.

¹⁷The development of the Committee is extremely well documented by Collins in tracing the social impetus of identifying design and then tracing its institutionalization.

¹⁸The Marshall Plan was implemented in 1947 to restore the European economy after WWII. It was also an obvious method for ensuring that the American empire would continue to grow outward.

¹⁹From the Foreward to the National Industrial Design Council publication *How the Industrial Designer Can Help You In Your Business* (Ottawa: 1949), as cited in Collins, *Design For Use*, 43.

²⁰Collins, *Design For Use*, 43-45, 54.

²¹Ibid., 77.

²²Ibid., 77.

²³Ibid., 78.

²⁴Ibid., 79.

²⁵Ibid., 85.

²⁶Ibid., 85.

²⁷This observation was made by Dr. Jacques Gaud in an interview on September 2, 1992, Ottawa.

²⁸Peter Day and Linda Lewis, *Art in Everyday Life: Observations on Contemporary Canadian Design* (Toronto: Summerhill Press/The Power Plant, 1988), 136.

²⁹Ibid., 135.

³⁰Willem Gilles, Ottawa interview.

³¹Bruce Archer, *Design Awareness and Planned Creativity in Industry* (Ottawa: Office of Design, Department of Industry, Trade and Commerce and the Design Council of Great Britain, 1974), 4.

³²An excerpt of remarks made by Dr. Pierre Bourgault, Assistant Secretary, Development Branch, Ministry of Industry, Trade and Commerce.

of State for Science and Technology at a provincial meeting on design in Winnipeg in September, 1972 as reported in *Design Canada*, Vol. 2/No.2, March 1974, 6.

³³Gerry Adamson, *Design Canada*, Vol.2/No.2, March 1974, 15-18.

³⁴This comment and the following quotation from *Canadian Design* (formerly *Design Canada*), March 1975, 16-17.

³⁵*Ibid.*

³⁶Thomas Garvey in an interview in October 1992. Garvey received funding from 1983-85 to study graphic design at Pratt University in New York.

³⁷Day and Lewis, *Art in Everyday Life*, 142.

³⁸*Ibid.*, 137.

³⁹The following concepts are as a result of the interview with Willem Gilles September 1, 1992.

⁴⁰The following concept is as a result of an interview with Jacques Giard on September 2, 1992.

⁴¹Witold Rybczynski, *Home: A Short History of an Idea* (New York: Penguin Books, 1986), 5.

⁴²Margaret Atwood, *Survival: A Thematic Guide to Canadian Literature* (Toronto: Anansi, 1972), 18-19.

⁴³Kari Levitt, *Silent Surrender: The Multinational Corporation in Canada* (Toronto: Macmillan of Canada, 1970), 153.

FOREIGN OWNERSHIP

Dependency policy

While Canadians generally enjoy significant material wealth and a healthy standard of living, economic development measured by the terms of other countries' international successes in exporting manufactured goods relegates Canada to underdeveloped status.¹ Industrialization is seen as a necessity if a country is to have a productive labour force and economic figures that describe a 'successful industrialized country'. In these terms, Canada's significant dependence on natural resources for its income provides for some explanations of the dichotomy of being underdeveloped and having a high standard of living. The extraction of resources is a capital-intensive activity that does not require the same investment in labour that a developed manufacturing sector demands. Substantial foreign investment in the infrastructure of resource extraction provides Canada with significant revenue but does nothing to develop a labour force that is productive. This focus on commodities for export revenue is not in itself detrimental but what is evident upon further analysis of the dependency thesis is that Canada's public policy makers have made conscious choices in maintaining the dependency on resource extraction and importation of finished goods and processes rather than encouraging a mixed economy of self-sustaining character. It will also become clear that policies that have been implemented to encourage manufacturing sector growth have tended to be ineffective in breaking this pattern of dependency.

In 1879, Sir John A. Macdonald introduced the National Policy and its associated tariffs in hopes of developing the industrial sector of the economy. It is an informative starting point in understanding the dependency patterns that have led to Canada's underdeveloped manufacturing sector and, by extension, the industrial design profession. Its thrust

established a political/industrial philosophy that has been echoed in concurrent evolutions of government policy that seemingly promote economic dependence.

Instead of adopting a policy of international specialization through the production for world markets of a number of technologically innovative lines, our state and economic élites chose a much less ambitious alternative strikingly similar to that known in the contemporary underdeveloped world as import substitution industrialization (ISI). This model relies on a tariff structure as an instrument for domestic manufacturers to capture primarily consumer-oriented sectors of the home market with a production process borrowed from foreign industrialists. Its two major components, import replacement and technological dependence, when fused, produce an industrial structure with little potential to grow beyond its domestic horizons.²

The significance of an ISI strategy is that the focus of the country's economy is inward. At the time, this policy would seem sensible to a young country and its policy-makers. The Minister of Finance, S.L. Tilley rightly believed that tariffs on imported goods would reduce imports and, therefore, reduce balance of payment deficits. Furthermore, it would stimulate the domestic economy, which would produce the goods not imported, and respond to the nationalistic platform that the Conservative government was promoting. In an 1878 pre-election speech, Sir John A. Macdonald succinctly established this intent:

I believe that, by a fair readjustment of the tariff, we can increase the various industries which we can interchange one with another and make this union a union in interest, a union in trade, and a union in feeling. We shall then grow up rapidly a good, steady and mature trade between the Provinces, rendering us independent of foreign trade, and not, as New Brunswick and Nova Scotia formerly did, look to the United States or to England for trade, but look to Ontario and Quebec -- sending their products west, and receiving the products of Quebec and Ontario in exchange. This

is the great policy, The National Policy, which we on this side are advocating....³

This internally focussed policy giving Canadian manufacturers tariff protection did promote substantial industrial growth as many small manufacturers established themselves behind the insular tariff barriers. Furthermore, the development of the transcontinental railway heightened the internal focus both in its construction linkages and its perceived importance as a political and geographical device for uniting the country from sea to sea. Not only did the government and economic élites control the forging of this new nation, they also financially promoted the National Policy in their own terms as the domestic market grew in itself.

The unforeseen effect of the National Policy was that the minds of Canadian manufacturers and industrialists were inadvertently closed to the idea of exporting their wares. The domestic market was wealthy as a result of captive resource trade with the British empire and could certainly support and contribute to the growth of the manufacturing sector. The result of pursuing this insulated economy was that the volume of products required to satisfy domestic demand did not require development of capital goods that would allow for increased production efficiency and labour opportunities. Inexpensive capital equipment, compared to developing new technology, was readily available from foreign sources that had moved on to develop progressive technologies of production. Not only did this economic choice bypass employment opportunity in satisfying the needs of new industry by way of the forward and backward linkages of technological spin-offs, it also established a dependency on foreign technology that tended to be obsolete in foreign terms. A Canadian mind had been born that was more interested in surviving in business and making a living at home than looking forward and outward for opportunity and rewards. The economic barriers virtually encouraged foreign companies to purchase their way into the

Canadian marketplace. Unfortunately, they purchased successful Canadian manufacturers which then fell under the control of the home office. For industrial designers this meant that any potential employment disappeared along with the control of our productive instruments.

In *Ideas in Exile*, J.J. Browne lambastes Canadians, calling them "...lazy, timid, conservative to the point of idiocy," reasoning that our abundant raw materials have made us so. Domestic initiative in making an effort to advance manufacturing or process technologies seems to support his observations. In Canada approximately 50,000 businesses are involved in manufacturing and in technology-dependent services: less than three per cent of these do any R&D at all.⁴

These statements and figures fail to recognize the high number of branch plants that perform their research and development in their home offices and the established dependency patterns that are a barrier to firms pursuing R&D efforts or industrial designers attempting to practice. Furthermore, it is imperative to comprehend the demographics of the manufacturing sector in order to avoid unconstructive generalities. In particular, foreign ownership provides for the most striking explanation for the lack of initiative in pursuing developmental activity in Canada.

There is a view perpetuated in discussions of the ownership of Canada's manufacturing sector that foreign branch plants are a recent phenomena. It is commonly believed that the country was too busy dealing in natural resources to engage in any type of manufacturing activity and that American imperialists descended on the country creating a foreign owned manufacturing sector in Canada. What is not generally realized is that the manufacturing capabilities of Canada were significant in the late 1800s and that "despite its small population, Canada was in the big leagues both as a producer and a consumer of industrial

goods. At the time of Confederation Canada manufactured more than Japan and Sweden..."⁵

Canadian iron was well respected for its quality and price, and the export of agricultural implements reached over forty countries.⁶ What will become clear is that American capital was attracted to established Canadian industries and was inadvertently encouraged to transplant domestic ownership as a result of economic policy and shifting political alliance from the British to the American Empire.

Policy encouraging foreign ownership

At the turn of the century the threat of 'Americanization' or 'American invasion' was a common cry in Europe as American capitalists exported goods and purchased foreign companies.⁷ In fact the invasion was most pronounced in Canada where by 1914, 450 branch plants and subsidiaries were in operation.⁸ By 1929, the value of direct investments in Canada was 50 per cent greater than in all of Europe.⁹ In a 1926 survey, the first year that foreign investment had been seriously documented, 30 per cent of Canadian manufacturing was foreign owned. By 1962, the number had increased to 45 per cent and currently stands at approximately 50 per cent which is the highest level of foreign ownership in the world.¹⁰ The National Policy which was intended to spur domestic economic activity and encourage foreign investment had in fact created just the opposite effect. The American branch plants did not contribute to the backward and forward linkages necessary to develop a manufacturing infrastructure and established industrial design community. Instead they became an underground railroad for American parts, machinery, and brand names escaping the tariffs set up to prevent such an invasion. This effect was noted in a US Senate report in 1931 which stated that the "branch factory, by

and large, is merely a more intensive method of selling an American product in foreign markets."¹¹

The working clause of the 1872 Patent Act also had an unforeseen effect on the Canadian industrial infrastructure. In the absence of the clause a company could hold a patent and export from its home base into Canada. The philosophy of the working clause was meant to counter this effect in encouraging the enlargement of domestic output as a result of the manufacturing that would result from foreign firms working their patents. This was the same goal that underlay the National Policy, that is, stimulating the domestic economy. Unfortunately, the Patent Act has been widely cited as the catalyst for the high level of foreign investment in Canada, particularly in the manufacturing sector. As early as 1908 this effect had already been noticed and it prompted Edward Porritt to state that Canada's Patent Act "has been as instrumental as the high duties on manufactured articles imported from the United States in compelling American manufacturers to establish branch factories in Canada - even more directly in many instances than the tariff."¹²

The conditions of the working clause made it necessary for the foreign patent owners to either establish a branch plant in Canada or to license the new technology, process or product idea to a Canadian firm or entrepreneur. Licensing arrangements were often a prelude to foreign ownership.¹³ Once a branch plant was established in a community and linkages and dependencies on the plant for employment had been formed, it was difficult for authorities to uphold the working clause if there were any violations of the Patent Act. Any serious actions taken on the defensive patenting firm meant the welfare of the local community was at stake if the branch plant closed its doors. Whatever strategy a foreign patent holder pursued, it is clear that the benefits of the relationship did not accrue to Canada as foreign direct investment increased under the guise of employment opportunity for constituents and tax revenue for the government of the day.

Direct investment

The most important aspect of the acquisition and establishment of the branch factories by the United States is in realizing that this importation of capital as direct investment is considerably different than the conditions of portfolio or loan investment as a method of securing foreign capital. British investment in the formative years of Canada's economy consisted of the ownership of bonds, debentures, non-controlling equity stock, and loans. Repayment of these liabilities resulted in domestic ownership and the investors went away with the profits made in interest from their investment. On the other hand, direct investment in the form of subsidiaries and branch plants results in control resting with a foreign owner, the liability inevitably becoming permanent.¹⁴ The impetus for a company to invest directly in the infrastructure of another country is primarily to acquire markets that are not economically accessible in normal trading terms. American corporations are adept at making purchases and investments

to create some kind of permanent organization abroad – plants, refineries, sales offices, warehouses—to make, process and market goods for local consumption and, in some instances, for sale in third areas. Such operations typically combine U.S. personnel, technology, know-how, machinery and equipment, to expand the productive capacity of the countries in which the investment is made and to open important markets for the products of the investing country. Venture capital engaged in the location, extraction and refining of mineral resources; in developing agricultural resources; in establishing manufacturing, trade and banking enterprises; and in building and operating public utilities that serve foreign areas—all these represent direct investments.

It is important to distinguish between direct investments and the other forms of private investments abroad – banking and portfolio. A bank loan or credit to a foreigner is strictly a financial transaction between the lender and the borrower with a fixed maturity;...the bank may require the borrower to

deposit some collateral. A portfolio investment may take two forms—purchase of foreign bonds and debentures or purchase of foreign stocks by a U.S. resident. Purchases of bonds and debentures are, like bank credits, at fixed terms with no equity interest; purchases of stocks involve equity interest, but generally not controlling interest. Only when 25 per cent or more control is attained is the investment considered a direct investment. This assumes some measure of managerial influence.¹⁵

It was obvious that purchasing a Canadian factory was a profitable way of avoiding tariffs and guaranteeing access not only to the Canadian market but also guaranteed access to Canadian natural resources. Furthermore, an American company would be interested in acquiring a Canadian company or setting up operations in Canada as it allowed an empirical route to the European markets as well. Because the British Empire granted preferential treatment to Canadian goods it was of benefit to an American company to export from their Canadian subsidiary as this extended their tariff-free marketplace. It is interesting to note that Australia, which was considering the adoption of preferential Empire tariffs, did not fall prey to the "Made in Canada" labels on products that were manufactured in the United States and merely assembled in Canada. An Australian politician commented:

[B]usiness people in the United States of America are investing capital in Canada and opening up factories there, where parts of machinery manufactured in the United States of America are assembled in order to get the benefit of the preferential tariff granted by Britain to Canada. As soon as the Americans know that preference is to be granted to Canadian goods by Australia, this country will be flooded with articles of Yankee origin.¹⁶

Subsequently, the Empire content requirement was set at 75 per cent for goods from Canada.¹⁷ This event was also damaging to the image of the Canadian manufacturing sector as they were accused of being a willing front for American imperialism. Any effort by a Canadian subsidiary to show signs of sovereign decision-making was not really

possible anyway since parent companies would ensure that their subsidiaries would not contradict their agendas. It also followed that a Canadian branch plant would never be allowed to compete in the same market as the parent, further illustrating the control of economic destiny by head offices in the United States. Meanwhile, Canadian trade officials maintained that assembly and associated operations should be considered manufacturing and be treated as Empire content, much to the pleasure of American controlling interests. This stance had to be taken by Canadian officials as jobs would be lost if trade was not continued or allowed which would inevitably result in the closure of the plant in question. Even at the domestic level the Canadian Manufacturing Association President went so far as to instruct his members:

We've got to show that buying "Made-in-Canada" will bring prosperity to the family of the consumer to whom we are speaking....We have got to satisfy the Canadian woman in particular that, unless she buys the goods made by Canadians, other Canadian wives will not have the money with which to buy the goods made by her husband or, for that matter, any Canadian worker. We have got to establish in the minds of all consumers that their individual well being...is indivisible from that of manufacturing industry....¹⁸

An ailing manufacturing sector and the resultant plant closures and therefore job losses would be disastrous for politicians and communities alike as employment is the resin of well-being in any economy. Of related importance is the fact that Canada is very much a 'small town country' with about one half of all Canadians living in communities of fewer than 30,000. Many of these towns are one industry communities.¹⁹

The central "fact of life" in these communities is dependence. Members of the community are dependent on a single employer. Their economic and social well-being is highly dependent on outside factors -- the commodity market, the availability of capital, and so on. In fact, as these communities

are typically "branch plants," decisions critical to community life are made in distant, often foreign cities. Not only does the single-industry—the company—determine to a great extent, the economic and social well-being of the members of the community, it also shapes their view of the world.²⁰

It is not coincidence that this dependent state of living under the influence of directly foreign owned industry also creates what has been referred to as technological backwardness.²¹ That is, advantages accrue to those that are innovators, not takers of technology. In a branch plant economy the research and development is done primarily in the home office which tends to explain the low percentage of research and development spending in Canada. In *Silent Surrender*, Kari Levitt emphasizes that "branch-plant economy destroys the mobilizational basis of indigenous entrepreneurship" and even suggests that talented people, including industrial designers, that might make a difference in the economic sphere, tend to gravitate to profitable positions or assignments with the multinational corporations of the American 'metropolis' furthering Canada's destiny toward becoming a hinterland economy.²²

Finally, the intensity of American direct investment or ownership of Canadian industry also coincided with a shift in political and military allegiance from the declining British Empire to the ascending American regime. This shift is represented by Canada's involvement on the Permanent Joint Board on Defence (of North America) in 1940 and under the American-led alliances of NATO (North Atlantic Treaty Organization) and NORAD (North American Aerospace Defence Command).²³ In fact, the wartime 1940s and 50s are often considered to be the finale to the entrenchment of foreign ownership as a sorry hallmark of Canadian industry. The American-born C.D. Howe is often singled out as the perpetrator of this formidable handicap to Canadian prosperity. As the Canadian Minister of Munitions and Supply, Howe developed a formidable Canadian war-goods industry, only to sell most of it back to private, often American, interests after the war.²⁴ In the mid 50s, Howe

inspired anguish by approving American ownership and control of the trans-Canada natural-gas pipeline prompting cries of despair. The possibility of becoming an American state was decried by politicians such as John Diefenbaker and lamented by writers like George Grant. Perhaps the cries of anguish were finally loud and passionate enough to require someone to be blamed. The evidence suggests that the predominance of foreign ownership of Canada's industrial infrastructure was clearly a submissive process that found its roots in early government policy and economic development. It does not appear that this trend is likely to abate since under the Free Trade Agreement with the United States foreign takeovers are virtually being encouraged.

The law regarding foreign ownership of Canadian business as set out in the federal "Investment Canada Act" provided that Canadian companies with business assets over \$5 million could be denied foreign take-over if the company was in healthy financial condition. This meant that the most profitable and larger businesses in Canada had some measure of protection from foreign take-overs. Under the Free Trade Agreement, Canada was required to amend the Act so that, in regard to American direct investment, there would be no review unless the business assets (after three years) exceeded \$150 million in a direct take-over, or \$500 million in an indirect take-over. These amounts are so large that the Canadian Pacific Railway is even vulnerable to being bought up without review!²⁵ Of the more than 700,000 corporations in Canada, probably no more than 1,500 are large enough to be reviewed by Investment Canada in the face of a take-over. Also, prior to the FTA, foreign owned corporations in Canada that were being sold to a new foreign parent were also subject to review. The FTA eliminated that review for American based multinationals thus perpetuating and increasing the direct ownership of the Canadian economy.

Investment Canada has recently released the cumulative results for the first seven years of its existence (June 30, 1985 to June 30, 1992). The total of

foreign investment activity monitored by the agency during this period was \$115.817 billion. Of this amount, 93.2 per cent was for the takeovers of 4,515 companies in Canada, and only a tiny 6.8 per cent was for new business investment. When Prime Minister Brian Mulroney abolished the Foreign Investment Review Agency and established Investment Canada, he declared Canada "open for business." The above figures paint quite a different picture. Rather than being "open for business," Canada is clearly up for sale.²⁶

It is painfully clear that the majority of Canada's manufacturing sector's destiny lies in the hands of others. Proponents of foreign ownership as a method of sustaining the economy can easily make a case for the output of 'Canadian' [sic] industry.

No one doubts that American investment has accelerated the pace of economic development in Canada;...but it seems also likely to convert Canada into a hinterland of United States industry....To each spurt of expansion there is a corresponding shrinkage in Canada's freedom of action, in its self-reliance, and in its ability to chart its own course for the future.²⁷

Clearly the industrial design profession does not appear to have a voice within the industrial infrastructure presented. Foreign companies use designers from their home offices relegating Canadian industrial designers to the margins of industrial activity. An examination of the domestic milieu will provide even more insight into why the manufacturing sector is underdeveloped and will further explain why industrial design is a marginal profession in Canada.

Endnotes

- ¹Glen Williams, *Not for Export: Toward a Political Economy of Canada's Arrested Industrialization* (Toronto: McClelland and Stewart, 1983).
- ²*Ibid.*, 13.
- ³W.W. Rostow, *The Stages of Economic Growth* (Cambridge: Cambridge University Press, 1960).
- ⁴Yvonne Van Ruskenveld, *About Canada: Innovation in Canada* (Ottawa: Department of the Secretary of State, Canadian Studies Directorate, 1988).
- ⁵Gordon Laxer, *Open For Business: The Roots of Foreign Ownership in Canada* (Toronto: Oxford University Press, 1989), 11.
- ⁶*Ibid.*, 11.
- ⁷*Ibid.*, 12.
- ⁸F.W. Field, *Capital Investment in Canada*, 3rd ed. (Montreal: Monetary Times of Canada, 1914), 39-42, as cited in Laxer, *Open For Business*.
- ⁹Laxer, *Open For Business*, 13.
- ¹⁰James Gillies, "Reversing Our History: Can Canada Compete?," *Inside Guide*, June 1991, 19.
- ¹¹US Senate, 'American Branch Factories Abroad' (71st Congress, 3rd Session, Document No. 260), 5, as cited in Laxer, *Open For Business*, 14.
- ¹²Edward Porritt, *Sixty Years of Protectionism in Canada, 1846-1907* (Toronto: Macmillan, 1908), 410, as cited in Laxer, *Open for Business*, 161.
- ¹³Laxer, *Open For Business*, 161.
- ¹⁴Kari Levitt, *Silent Surrender: The Multinational Corporation in Canada* (Toronto: Macmillan of Canada, 1970), 59.
- ¹⁵*The United States Balance of Payments, An Appraisal of U.S. Economic Strategy*, International Economic Policy Association (Washington, D.C., 1966), 24,25, as cited in Levitt, *Silent Surrender*, 59.
- ¹⁶Australia, House of Representatives, Debates, October 2, 1924, p.5084, as cited in Williams, *Not For Export*, 89-90.
- ¹⁷*Ibid.*, 90.
- ¹⁸*Ibid.*, 127.
- ¹⁹Alex Himelfarb, "The Social Characteristics of One-Industry Towns in Canada," *Little Communities and Big Industries: Studies in the Societal Impact of Canadian Resource Extraction*, Roy T. Bowles ed (Toronto: Butterworths, 1982), 16.
- ²⁰*Ibid.*, 17.
- ²¹Levitt, *Silent Surrender*, 106.
- ²²*Ibid.*, 107-10.
- ²³Laxer, *Open For Business*, 12.
- ²⁴Robert Bothwell and William Kilbourn, *C.D. Howe: A Biography* (Toronto: McClelland and Stewart, 1979), 128-96, as cited in Williams, *Not For Export*, 12.
- ²⁵Marjorie Montgomery Bowker, *What Will the Free Trade Agreement Mean to You and to Canada? - An independent analysis based on the actual text of the Canada/U.S. Free Trade Agreement* (Edmonton: July 1988), unpublished document.
- ²⁶Mel Hurtig, letter to the editor, *Globe and Mail*, September 11, 1992, A16.
- ²⁷Hugh G. J. Aitken, *American Capital and Canadian Resources* (Cambridge: Harvard University Press 1961), 112-13,114, as cited in Levitt, *Silent Surrender*, 149.

REGIONS OF CANADA

It is correctly assumed that the majority of industrial design activity is pursued in Ontario and Québec. This has much to do with the development of the economic geography of Canada. The opportunities available in other regions of the country are marginal and, as will be seen, offer an important perspective in attempting to strengthen the industrial design profession's resolve toward becoming a valued part of economic resurgence.

For our purposes, a region may be described as a division of space that is "a territorial entity having some natural and organic unity or community of interests that is independent of political and administrative boundaries."¹ Regions can be defined in geographical terms such as topography, climate, land use and in demographic terms such as ethnicity, age and other vital statistics describing the inhabitants, or consumers, of the particular area. This is logical in the sense that people relate to the place where they live and describe their particular division of space as a region. For example, a person might say that they live in the mountains, or in Chinatown or simply down by the river. In Canada it is not uncommon to describe one's home as being in the Maritimes or being from out West. The desire to study, interpret, and compare the cultural and economic characteristics of the inhabitants of these spatial divisions has resulted in the development of such terms as regionatism and regional disparity. These are merely descriptors of being part of a region and the recognition that there are differences between the regions.² What is more important is to understand how the regions of Canada have developed into what they are today so that effective forward looking decisions can be made about how industrial design can contribute to the re-creation of Canadian manufacturing initiative.

It is increasingly common to speak of Canada as a single entity in terms of economic development. This phenomena has been enhanced in recent years as a result of the

accelerating unification of global trade and political relations. The other side of the world is only seconds away in terms of communication and data movement and only hours away with respect to commodity and human resource exchange. Participation in this international environment is facilitated through the federal government which handles most international agreements and policies. This role was secured at Confederation in 1867, when Canada combined formerly independent provinces into a federal state. This established 'Canada' as an independent power securing authority to deal internationally for its inhabitants. Eventually the entire country became demarcated politically and administratively to form what we know as the provinces and territories 'of' Canada. Although provincial governments are free to pursue international interests this structure has become the framework through which the various regions of Canada are represented and dealt with. The reason for combining political entities into social constructs is best described as convenient.

Provincial boundaries have corresponded poorly to the hinterlands of regional cities. In the West they were arbitrary lines drawn before substantial settlement. In the East they bore some relationship to colonial territories and to prior settlements; but with the exception of a small part of the southern boundary of Québec none of these political lines had been drawn to reflect cultural regions. They were lines of cartographic or administrative convenience suggested, usually, by the configuration of the land and the border with the United States. Still, local settlements developed within a province, and this meant, as time went on, that they were exposed to the same provincial politicians and laws; to the same provincial capital; and to an identifying name. Over time such exposure would foster a sense of provincial identity.⁴

Provincial governments have consistently attempted to exercise what powers they do have to maintain control over their economies. Since the scale and diversity of industry and government involvement has become increasingly complex it has been necessary for these

bodies to collect statistics and information regarding local activities in order to be able to manage them. As a result, comparison and action at the federal level in evaluating and rationalizing transfer funds, grants, and programs is a matter of adding and subtracting figures obtained at the provincial level. It is not uncommon to hear of farmers in the West or fishermen in the Maritimes receiving some sort of assistance or federal attention even though the movement of these finances or services show up on the balance sheets of the individual provinces or are directed federal programs. The provincial political jurisdiction within the regions of Canada amplifies the continuing conflict that is inherent within the concepts of regionalism and federalism themselves.

In political terms this federal-provincial governing structure is consistently strained which is to be expected considering that there are two bodies seeking jurisdiction and attempting to share and maintain power over the same piece of land. This discord is multiplied by the fact that federal jurisdiction is a balancing act with respect to individual provincial demands. This spatial organization is further complicated by the layer of geographic organization described as the regions of Canada.

The goal of promoting all regions' employment and income levels is reinforced by the federal structure of government in Canada, whereby the interests of the provinces are represented by the provincial governments which themselves have not inconsiderable powers in the policy arena, although differing degrees of economic and political power.⁴

Although the official discourse regarding trade matters, business and financing is carried out in the halls of federal and provincial buildings, the marketplace and production linkages with respect to manufactured goods and services has developed on a regional basis.

Regional formation

In Canada there is a tendency to equate regions with political boundaries. The Atlantic region or the Maritimes is said to consist of Newfoundland, New Brunswick, Nova Scotia, and Prince Edward Island; the Prairies or the West consisting of Manitoba, Saskatchewan, and Alberta; the Pacific coast is solely British Columbia; Ontario is Central Canada; and the Québec region is named after the political boundary itself. The study of these regions in relation to the discussion of manufacturing and design has been well described as being of a heartland-hinterland, metropolis-hinterland, core-periphery, centre-periphery, or centre-margin relationship.⁵ This framework for analysis provides a solid base from which to build our understanding of regional formation and how it has affected the current manufacturing status-quo and thus, industrial design.

Heartlands usually develop in areas which possess favourable physical qualities and grant good accessibility to markets; they display a diversified profile of secondary, tertiary, and quaternary industries; they are characterized by a highly urbanized and concentrated population which participates in a well-integrated urban system; they are well-advanced along the development path and possess the capacity for innovative change; and they are able to influence and usually control — through the power of the metropolis — economic, social, and political decisions of national importance. Hinterlands are characterized by the obverse: an emphasis on primary resource extraction; scattered population and weakly integrated urban systems; limited innovative capacity; and restricted political prowess. Hinterlands, therefore, are all the regions lying beyond the heartland whose growth and change is determined by their dependency relationships with the heartland.⁶

Of particular relevance in this framework is the concept of power. Although regions are usually dependent on each other for goods and services there is a tendency for a center to

develop with an associated periphery or margin. Prior to Confederation, Canada's place in the international economy was peripheral to the powers of European empires. Although centers did develop as a result of staple trade with Europe, they were relatively powerless compared to the Empire. The arrival of capital and population at this time was primarily of an east to west nature as lands were settled and exploited. In 1867 it was still not totally clear where the center of Canada's industry would reside. The 1871 Census showed a population of 1,620,951 for Ontario, 1,191,516 for Québec, and 767,415 for the three Maritime Provinces.⁷ The Atlantic area was prospering as a result of exporting timber, lumber products, fish, and ships. They also had a financial base that could be mobilized into other manufacturing activities.

The Maritime colonies' entry into Confederation was a divisional development. Influential members of the political and economic élite believed that union would dissolve debts, protect their fishing industries and would improve transportation links with the growing markets of Central Canada, increasing economic activity in Maritime industry and shipping.⁸ Opponents of the move warned that economic benefits would eventually favour Central Canada which, in retrospect, they did. There are other explanations regarding this eventuality. Better soil conditions in Central Canada encouraged settlement resulting in a growing local market for goods and industrial diversification. The discovery of bountiful ores on the mainland and the harnessing of abundant water sources for the generation of hydro-electricity further contributed to the growth of the Central Canada infrastructure. Perhaps most importantly, the country was expanding away from the Maritimes as the North and the West were settled according to the vision of the National Policy of 1879. The political and economic élite that ruled Canada were located in the Central region and accrued the benefits of brokering the movement of people and trade across the country.

At approximately the same time, tariff barriers were erected by the United States in retaliation for the Galt-Cayley tariff which was set up to protect Central Canadian manufactured goods and agricultural commodities. These protectionist initiatives ended the Elgin-Marcy Reciprocity Treaty of 1854 which was designed, in Canadian terms, to provide access to markets for the staples that were not guaranteed to be purchased anymore as a result of emerging industrial British economic policy. The Maritimes were not able to continue to develop the available markets in New England, nor did the promise of economic advantage materialize as a result of joining Confederation. The result was a stagnation of their economic development. Canada's industrial core developed in Southern Ontario and Québec pushing the Maritimes into a marginal role as an underdeveloped economic hinterland.

Central Canada gained further economic strength on the domestic front as a result of foreign investment. American manufacturing industry, which was primarily located directly south of Central Canada, could not secure access to a growing Canadian market because of the tariff barriers introduced by the National Policy of 1879. Instead, they were encouraged to set up subsidiary manufacturing operations in Canada. This development was beneficial to both parties. The Americans could now access the Canadian market duty-free and in turn, Canadians were provided with jobs. The local economy was stimulated, as proven American technologies were affordable and a consistent demand for Canada's increasing portfolio of resources was now guaranteed. These linkages to American manufacturing initiatives set the stage for a new level of dependency and underdevelopment in Central Canada which was similar in nature to the centre-margin relationship which Central Canada had imparted upon Atlantic Canada.

The historic establishment of Canada's industrial core as an identifiable region introduced a spatial dimension, independent of political boundaries, to the Canadian landscape. "The

worldwide tendency of manufacturing and service activities to coalesce into large urban agglomerations and of resource extraction and agricultural activities to be carried on in relatively lightly populated areas has resulted in the formulation of the *heartland-hinterland* model of spatial activity."⁹

The Central Canadian region extending from Windsor through the Toronto area and northeast along the St. Lawrence River to Montreal and Québec City has become known as the Windsor/Québec axis. It grew in strength behind tariff walls and supplied manufactured goods and services to an expanding domestic market, establishing itself as Canada's industrial heartland. The heartland usually depends on the hinterland for supplies of agricultural and extractive goods (resources), while the hinterland is dependent on the heartland for manufactured goods and services.¹⁰ In Canada this is not necessarily the case as both spatial entities do not rely exclusively on each others' characteristic supply. Although a center-margin synthesis exists, dependency on foreign supply and demand is an overriding thesis.¹¹ Each region, therefore, is affected differently as part of the overall periphery of the Canadian economy prompting the federal government to take up an equalization posture.

It is an important policy issue in itself how far the goals with respect to national variables conflict with goals as to their regional distribution. Is regional equity only pursued at the cost of national efficiency? Even if not, can the improvement of one region's lot be achieved at the cost of other regions' positions? The Macdonald Commission (Government of Canada, 1985, p.199) reaffirmed regional goals for the federal government, but expressed these as involving a trade-off with national efficiency.¹²

The situation is further complicated by the provinces continually evolving their own policies in an attempt to maintain some degree of control over the maintenance of the well-being of their peoples. The term *province-building* is often used to describe the tendency

of the provincial governments' efforts to control financial and human resources through the development of provincial crown corporations, industrial planning and industrial policies, and in resource based development and decision-making.¹³ The term has also come to be associated with provincial initiatives with regard to constitutional reform, taxation, and resource ownership issues. The need of the provinces to implement policy that is in their best interests was aptly justified by Premier Bennett of British Columbia when he said that, "we are not a single national economy; we are a country of distinct regions, with distinct economies unto themselves."¹⁴ This attitude of localized self-determination may be preferable to the inhabitants of a particular province but it is destructive in terms of the well-being of the federal state. Each province has developed its own standards and legislation for dealing with marketing boards, credit corporations, and procurement and trade of goods and services. In some cases these provincial pronouncements overlap federal legislation contributing to confusion in the domestic market-place.

Domestic non-tariff barriers

Although not obvious to an industrial designer when given a brief, the issue of non-tariff barriers significantly affects the volumes of sales activity of a Canadian manufacturer in the domestic marketplace. This, in turn, will directly affect the most appropriate choices of manufacturing technique to efficiently satisfy potential markets. The term *balkanization* has been used to describe the provincially based barriers that hinder inter-provincial trade and policy inconsistency: "In some sectors...the balkanization of Canada's national market remains so pronounced that it constitutes a major obstacle to Canadian producers trying to operate on a viable basis, either domestically or internationally."¹⁵

In fact, most of the obstacles are non-tariff barriers (NTBs) which, curiously enough, are intended to grant advantage to Canadian interests but have actually had the opposite

effect.¹⁶ A poignant example is the urban transit sector. The major NTBs in this sector are provincial since urban transit is a provincial responsibility. All provincial governments have local and Canadian procurement and preferential purchasing policies. Québec, for example, has a 45 per cent Québec content requirement while Ontario gives a preference of 10 per cent to its companies. The Flyer company of Manitoba is therefore effectively shut out of Québec and, likewise, the GM plant in Québec is not able to sell its buses in Manitoba. Also, provincial governments will often procure from local sources on a non-competitive basis, rejecting lower priced bids from out-of-province suppliers. Not only are these NTBs wasteful but they contribute to a further fragmentation of the domestic market. These practices also harbor the unseen effects of hindering growth for domestic producers as they are essentially confined to the political borders of their origin. Furthermore, the possibility of combining forces with other manufacturers in a particular sector to bid on large foreign contracts is difficult amongst the unfriendly fragmentation. Canadian companies often find themselves competing against each other for foreign work or sales. The strong interests and guaranteed markets that have become rigid under this scenario make it difficult to remove the NTBs even though this might mean a more efficient national industrial configuration.¹⁷ Provincial governments have a very clear mandate when they are given jurisdiction which essentially leads to the protection of their provincial interests. The ability of provincial economies to compete within the international trade agreements which the federal government negotiates is effectively stunted contributing to the marginalization of Canadian commerce within the international community.

Federal regional policy

Federal efforts in dealing with the different regions and provinces has been ineffective with respect to removal of economic barriers or in spurring economic growth within the margins or hinterland. In *The Economic Background of Dominion-Provincial Relations*,

W. A. Mackintosh traces the economic history of Canada in terms of the shifts in regional fortunes.¹⁸ He identifies the marginality of both the prairie provinces and the maritimes in relation to the Central Canadian industrial heartland. The federal government's regional development policies were initially aimed at rehabilitating farmland through the Prairie Farm Rehabilitation Act (PFRA,1935) and the Maritime Marshlands Rehabilitation Act (MMRA,1948). Both pieces of legislation were relatively inconsequential.¹⁹ The election of John Diefenbaker raised the issue of underdeveloped margins with a focus on rural poverty and Atlantic region rehabilitation. In 1962, the government formed the Atlantic Development Board (ADB) which was to advise the region on development matters. The ADB was eventually granted an Atlantic Development Fund of \$186 million to revitalize the region's infrastructure. Most of the fund was spent on highway, water, and sewage systems improvement, which, in the short-term, created jobs in construction but did not contribute to long-term employment.²⁰ This 'capital in' approach was not consistent with the Atlantic Provinces Economic Council recommendations of providing incentives to industry which may have at least provided long-term employment potential and opportunities for economic linkages within the region. This concept of linkages or the cluster concept within a region are usually born of a local technique and grow as a result of local skills of the workforce and appropriateness for the community which must support or be part of the agenda.²¹ That is, a successful program will naturally grow on the strength of the indigenous skills and techniques of the community. Because of the lack of a coherent strategy regarding the Atlantic region the programs were disbanded by 1969.

The Diefenbaker government was also responsible for introducing the Agricultural Rural Development Act (ARDA,1961) which was aimed at reducing the the extreme disparities that existed between rural and urban Canadians. ARDA was a shared cost program which resulted in the poorer provinces finding it difficult to match federal funds to support development initiatives. In 1964, the new Liberal government amended the Act expanding

funding to a regional focus rather than the general area of agriculture. By 1966, however, the Economic Council of Canada (ECC) reported that the program had not significantly reduced poverty in the rural margins and advised that a new regional strategy be proposed.

In 1966, the Fund for Rural Economic Development (FRED) was initiated with promises of comprehensive study and design to ensure long-term effectiveness. It was disbanded before any significant programs were implemented. FRED became redundant with the creation of the Department of Regional Economic Expansion (DREE) which reflected a change in the federal government's approach to promoting regional development. Specifically, the emphasis shifted from trying to stimulate the development of sustainable infrastructures in the margins to a focus on stimulating urban industrial growth within the regions of Canada. DREE, however, was misguided in that it promoted industries within the margins that it thought would be successful rather than what would be appropriate for the particular location. The growth of peripheral enterprise around DREE's initiatives through production linkages did not materialize as local communities did not have the skills nor the means to complement the transplanted industries.

In 1980, the Trudeau government introduced the National Energy Program (NEP, 1980) which was seen as an attack on the powers of the provinces, particularly by the West. This signalled a turn in federal policy as it maintained a nationalist design in dealing with industrial strategy. In 1981, the federal government released the White Paper *Economic Development for Canada in the 1980s* which promoted the development of Canada's resources and identified that "a second area in which Canada is presented with exceptional economic opportunities is in manufacturing activity, both to supply machinery, equipment, and materials needed for resource development and to extend the further processing of resources beyond the primary stage."²²

After the release of the White Paper, both DREE and the Department of Industry, Trade and Commerce were folded into a reorganized regional development structure. Needless to say, the federal initiatives were largely unsuccessful in promoting a nationalist agenda amongst an increasingly rigid regional economic structure. In 1982, the government appointed Donald Macdonald to head the Royal Commission on the Economic Union and Development Prospects for Canada as an alternative to ineffective policy. The Commission reported in 1985, to a Conservative government that was determined to manage economic renewal through market-driven initiatives. (It is poignant to note that this is the same time that Design Canada was disbanded, effectively excluding the possibility that the industrial design profession might be represented in policy matters.) The government found support in the Macdonald Commission *Report* which recommended a free-trade deal with the United States. The most significant element of this development is that any regional programs or sectoral financial assistance could be considered subsidies and therefore be subject to reduction or removal by the United States. The free-trade agreement took effect on January 1, 1989 and, as will be seen, its impact has been significant. What has not been determined yet is how much power the provincial governments actually have to develop their particular economies and what support they can expect from their federal counterparts. A few premiers have acknowledged the reduction of provincial authority but maintain that it is a small price to pay to gain access for their resources on the American market.²³ This structure of authority is extremely volatile as provinces continue to lobby in their own interests. The most recent trade initiative, the North American Free Trade Agreement has made this situation even more intense

It is not clear how the federal government will be able to effectively manage the 'economies' of Canada or the reduction of services Canadians take for granted. The complexity and divisive nature of the issue is clearly evident in the fact that inter-provincial barriers to commerce were specifically omitted from the constitutional talks and the

agreement reached by the First Ministers, Territorial and Aboriginal leaders in Charlottetown, August 28, 1992. However, in *Consensus Report on the Constitution*, the federal government reports that the "Constitution would set out key social and economic objectives shared by all governments.....strengthening the economic union; free movement of people, services, goods and capital; full employment;..."²⁴ It is difficult to believe that full employment is possible in Canada, and it is difficult to conceive that the barriers to trade will disappear between provinces. Plans to rectify this structural impediment within the domestic economic landscape are slow in materializing. This lack of cohesion is detrimental to manufacturers attempting to increase their production volumes and product offerings which would mean possible employment for Canadian industrial designers. This discontinuity also has the potential to further marginalize the manufacturing sector and Canada's industrial heartland within the increasingly international nature of the global economic order.

Endnotes

- ¹G. Stevenson, "Canadian Regionalism in Continental Perspective," *Journal of Canadian Studies* (Summer 1980), 17.
- ²Janine Brodie, *The Political Economy of Canadian Regionalism* (Toronto: Harcourt Brace Jovanovich Canada, 1990). Janine Brodie questions the usefulness of comparing regions for the sake of comparison considering that the term region inherently means that there is a difference in that spatial unit.
- ³R. Cole Harris, "Regionalism and the Canadian Archipelago", *Heartland and Hinterland: A Geography of Canada*, ed. Lawrence D. McCann (Scarborough: Prentice-Hall, 1982), 469.
- ⁴Sherla C. Dow, *Financial Markets and Regional Economic Development* (Aldershot: Gower Publishing Company, 1990), 122.
- ⁵Lawrence D. McCann, "Heartland and Hinterland: A Framework for Regional Analysis", *Heartland and Hinterland: A Geography of Canada*, ed. Lawrence D. McCann (Scarborough: Prentice-Hall, 1982), 4.
- ⁶*Ibid.*, 4.
- ⁷David F. Walker, *Canada's Industrial Space Economy* (Toronto: John Wiley and Sons Canada, 1980).
- ⁸Brodie, *The Political Economy of Canadian Regionalism*.
- ⁹F.J. Anderson, *Regional Economic Analysis: A Canadian Perspective* (Toronto: Harcourt Brace Jovanovich, 1988), 3.
- ¹⁰*Ibid.*, 3.
- ¹¹Refer to dependency theories of Innis, Lower, Mackintosh, Watkins.
- ¹²Dow, *Financial Markets and Regional Economic Development*, 123.
- ¹³Brodie, *The Political Economy of Canadian Regionalism*.
- ¹⁴As quoted in Brodie, *The Political Economy of Canadian Regionalism*, 200.
- ¹⁵John Crispo, *Can Canada Compete?* (Toronto: Hemlock Press, 1990), 15.
- ¹⁶Gilbert R. Winham, *Canada-U.S. Sectoral Trade Study: The Impact of Free Trade* (Halifax: Dalhousie University, Centre for Foreign Policy Studies, 1986), 20.
- ¹⁷*Ibid.*, 184-5.
- ¹⁸W.A. Mackintosh, *The Economic Background of Dominion-Provincial Relations* (Toronto: McClelland and Stewart, 1964).
- ¹⁹Brodie, *The Political Economy of Canadian Regionalism*, 171.
- ²⁰O. Sitwell and N. Seifried, *The Regional Structure of the Canadian Economy* (Toronto: Methuen, 1984), 162.
- ²¹Michael J. Enright, "Why local clusters are the way to win the game," *World Link: The Magazine of the World Economic Forum*, July/August, 1992, 24-25.
- ²²P. Leslie, *Federal State, National Economy* (Toronto: University of Toronto Press, 1987), 19.
- ²³R. Gibbins, "National Reconciliation and the Canadian West: Political Management in the Mulroney Era," in A. Gollner and D. Salee, eds., *Canada under Mulroney: An End of Term Report* (Montreal: Vehicule Press, 1988), 87.
- ²⁴Canada, "Consensus Report on the Constitution," Charlottetown, August 28, 1992.

INTERNATIONAL TRADE

The notion of 'thinking global' has become a common theme as business and political leaders attempt to stimulate domestic enterprise. For an industrial designer this might mean that forms and colours chosen for a particular product must be appropriate for international markets. Depending on the project, considerable research could be required to ensure that a design will satisfy foreign attitudes and cultural traits. The number of countries that a product might be exported to is also governed by international trade and intellectual property agreements that must be adhered to. This arena of international manufacturing activity is a domain that successful industrial designers will need to become accustomed to if they are to contribute to the sector's growth.

The General Agreement on Tariffs and Trade

Canada's participation in the international trading sphere is primarily governed by its subscription to the General Agreement on Tariffs and Trade (GATT). This body was first assembled in 1947 and was intended to liberalize trade and to provide a source of international law with regard to global commerce in the postwar period. Its primary focus concerns the use of trade barriers and GATT has been the primary source of international law regarding the use of tariffs and the interpretation of exceptions and violations to, and of, these rules. 97 countries are party to the agreement which includes all of the Western industrial countries as well as developing and East European countries. As this membership has grown so have the complexities and complications involved with providing an agreement that is hopefully equitable for all participants.

The major detrimental factors of the GATT organization are the obvious inequities that present themselves at the bargaining table. Trilateral relationships such as the North

American Free Trade Agreement (NAFTA) or the regional policies of the European Community (EC) threaten to erode the multilateralization of tariff and non-tariff barrier treatment.¹ Also, there is increasing friction and protectionism among the major economic powers (known as the majors): the United States, the European Community and, to a lesser extent Japan. Since these countries have the greatest amount of dollars at stake in the negotiations and their markets are the largest it follows that they have the most clout in the negotiations. Unfortunately, the Canadian negotiating position is weak because of Canada's early economic and technological dependency on Britain and France, and now to the United States. During the first five rounds of the GATT talks "the majors" virtually dominated the discussions and formulation of policy. Agreements were made on a product-by-product basis following a rule in which the principal supplier of a particular good would make requests of its export trading partners. The only maintenance of fairness was accorded by the most-favoured-nation rule which meant that the results of these bilateral negotiations were extended to other members of GATT. Clearly though, the advantage of any reduction in tariff barriers went to the principal suppliers of goods resulting in a rich getting richer scenario of international trade policy. Since the small and medium-sized countries were not principal suppliers of many products to international markets they were rarely in a position to request tariff reductions that would be to their exclusive benefit. This also tended to leave these countries out of the majority of the discussions that took place during these rounds. Canada however, did find itself involved in some negotiations primarily because its natural resources were desired imports for both Britain and the United States. The following two rounds of negotiations (Kennedy and Tokyo) resulted in the greatest reduction of tariff barriers but did not result in any change in the status quo of the players, "the majors" were still calling the shots.

The current GATT negotiations, which began in 1986 and are known as the Uruguay Round, are focused largely on:

strengthening GATT rules regarding non-tariff barriers and extending the scope and coverage of the codes; liberalizing agricultural trade and reducing trade-distorting subsidies; developing new rules to govern trade in services, trade-related investment measures, and intellectual property rights issues; and revising the GATT's institutional structure and decision-making system.²

Currently the greatest barrier to meaningful negotiations in the discussions is in the area of agriculture and associated subsidies in "the majors'" domestic economic strategies. It is ironic that the nations that have championed more liberal trade for their own benefits are most wedded to the protection of their agricultural subsidies or programs whether they are economically efficient or not.³ Although Canada has a vested interest in these initiatives its voice does not have much clout in terms of dollar value. "The majors" have so much strength that it has become a necessity for the small and medium-sized countries to band together or be part of the development of various groups or interest cliques within the GATT members. Canada is lumped in with the middle powers (of which there are 20) and finds alliances with such countries as Australia, Sweden, Brazil, and Hong Kong.⁴ The main reason that these countries have begun to work together is that they have not had much impact in what has become a "power-oriented" rather than a "rules-oriented" forum for decision-making with regard to international trade policy and law.⁵ Although this cooperation could give the middle powers some leverage in the talks, the current gaps seem to be growing among "the majors" to a point in which the future of the GATT as an institution and an agreement is in jeopardy.⁶

It is apparent that being a signator to the GATT does not guarantee prosperity for Canada, and particularly its manufacturing sector. The majority of Canadian companies are not of sufficient scale to allow the federal government to make demands in the multilateral trade

agreement environment. What will also become clear is that Canada's place within its bilateral commitments with the United States does little to counteract this lack of voice.

Free trade

Canadian business faces a daunting task of defining its place and surviving in an increasingly complex and competitive global system of trade. Specifically, the notion that a company is guaranteed survival in Canada because it has a product or service to sell and it is Canadian does not stand up in the face of increased counter-protectionist international agreements resulting in tariff reduction policies at the domestic level. The most recent policy in this regard was the 1989 Free Trade Agreement (FTA) which has been blamed for numerous branch-plant closures and an influx of lower priced goods threatening the existence of a number of industrial activities and jobs, particularly in the manufacturing sector.

Some 300,000 manufacturing jobs, 13 percent of the total, have been lost over the past few years, and an additional 80,000 are expected to disappear this year. Particularly hard hit have been the most protected industries, including leather goods, furniture, textiles, wood, and food processing. *High production costs and taxes, expensive capital, and uneasy labor-management relations have also led many manufacturers to move to the United States or Mexico.*⁷

The structural shifts in trading patterns stemming from the Free Trade Agreement has also led companies, many of them foreign, to rationalize their production plants, methods, and procurement strategies in order to ensure long-term profitability. The recessionary trend that Canada and the world are experiencing has also prompted the Canadian business elite and political leaders alike to herald competitiveness as a route to recovery and economic well-being with respect to other industrialized nations. There are, however, constricting

variables within this discourse that need to be acknowledged and rectified if competitiveness is to be a valid concept within the emerging globalization of trade terms and patterns.

Canada, although industrialized, is not a country with significant economic leverage. Dependency ties with Britain, France, and now the United States, has resulted in significant foreign ownership of business and intellectual property, making independent decision and policy initiatives at the domestic level unproductive. Canada's participation in tariff removal is virtually a means of self-preservation in order to maintain exports which account for 30 percent of its Gross Domestic Product, as opposed to 10.4 percent in the United States.⁸

Indeed, when one considers Canada's "de facto" free trade agreement with the U.S., along with the three-quarters of Canada's import and export trade that is accounted for by the Americans, and the nearly one-half ownership share of our productive instruments that they now enjoy, it is difficult to avoid the conclusion that the Canadian economy now looks less like a distinct national economy and more like a geographically large zone within the U.S. economy.⁹

Rather than being able to implement long term policy on its own terms, it appears that Canadians are being acted upon rather than being agents of change.

Free trade with the United States is not a new concept in Canadian economics or politics. In 1911, the Liberal government under Sir Wilfred Laurier introduced a free trade bill with the United States. The bill and the government were defeated. More recently Canadians have witnessed the Conservative government flip-flop from a position of deeming that free trade would "spell disaster for Canada" to championing an agreement as if the electorate

had demanded it.¹⁰ With the support of the MacDonald Commission (originally known as the Royal Commission on the Economic Union and Development Prospects for Canada) that free trade with the United States was an appropriate direction for Canadian economic policy, the Conservatives launched a massive publicity campaign aimed at extolling the Agreement's benefits. One estimate of the cost of this promotional effort was as high as \$24 million, a figure which no other organization or political party could match.¹¹

It became very clear during the campaign that the agreement was strongly supported by big business, including the branch plants of multi-nationals operating in Canada, and vehemently opposed by the margins of labour, smaller business and social interest groups. The Macdonald Commission heard submissions from these groups encouraging imaginative alternatives and striking critiques of conventional policy but did not include their views in its recommendations to the nation.¹² In announcing that Canadians must take a "leap of faith"¹³ and embrace free trade the Commission's chairman Donald S. Macdonald made it very clear to the public that he was not interested in their input and that they would have to heed to the élitist inquiry's recommendations.¹⁴

The actual reasons or impetus for the free trade agreement was rarely discussed in the months leading to the agreement. The government was strangely silent in selling the deal deferring to a "non-brainer" strategy of keeping the public uninformed.¹⁵ It was a widely held belief by government officials that an increasing American protectionist lobby was pushing a trade bill through Congress that allowed the United States to impose mandatory penalties against any country which trades "unfairly" with the U.S. The Free Trade Agreement was to protect Canadian exports from these punitive sanctions. What is not clear from the Agreement is how this would be done.

Disputes arising under both this Agreement and the *General Agreement on Tariffs and Trade*, and agreements negotiated thereunder (GATT), may be settled in either forum, according to the rules of that forum, at the discretion of the complaining party.¹⁶

The Agreement goes on to outline an elaborate plan of investigative panels and binding arbitration but does not address the issue of insuring compliance with or the enforcement of decisions. If the erosion of the GATT is partially being blamed on the lack of means to ensure compliance other than retaliatory measures or sanctions, then one wonders about the future of the Free Trade Agreement's effectiveness.

The Free Trade Agreement, which is heralded as a trade barrier reducing agreement, does not reduce hidden barriers to trade for Canadian business. If non-tariff barriers are considered, the barriers to trade with the U.S. are far from free and need to be exposed. In the United States, the 1974 Trade Act and the 1979 Trade Agreements Act both signalled a strong protectionist international trade policy in the United States in "legalizing" measures such as countervailing duties, anti-dumping legislation and other safeguards.¹⁷ These pieces of legislation are not affected by the Free Trade Agreement.¹⁸

U.S. contingency protection measures will further restrict the competitive abilities of Canadian firms and perhaps seriously impede the development and effectiveness of industrial development policies. They must be taken into account in any discussions regarding a trade and industrial strategy for Canada.¹⁹

If a Canadian supplier or manufacturer exports goods to the United States at a lower price than what is being charged by American producers the U.S. could claim that the Canadian company had the benefit of an unfair subsidy. This subsidy could be in the form of government tax credits, research funding or other reductions in development costs.

Depending on the protectionist element in the United States there could be a case made for these subsidies constituting "unfair trade".²⁰ Perhaps this is one of the reasons that Canadian government research funding is available to foreign subsidiaries!²¹

Countervailing duties are used by a country to offset or countervail any subsidies that they feel have been granted to a foreign importer. The countervailing duty is used as a threat to pressure the subsidizing party to remove a particular assistance program. The terms of the United States' countervailing legislation are broad enough that injury to a particular U.S. industry does not even need to be proven.²² Canadian industry therefore, is extremely vulnerable to countervailing measures.

The final governmental non-tariff barrier is the antidumping duty. If a product is sold in another country at a price lower than that charged in the domestic economy then it is said that the product is being dumped into the marketplace to either make a quick profit or as an attempt to steal market share. The country that is importing could retaliate by imposing a duty on the product to maintain a price level in support of its industry. A Canadian firm offering a product at a lower price in the United States, that is, being competitive through effective design, does not appear to be as straightforward as one might wish to believe. The Free Trade Agreement solidifies these non-tariff barriers as "each Party reserves the right to apply its antidumping law and countervailing duty law to goods imported from the territory of the other Party."²³

The promise of an expansive and willing market for Canadian manufacturers and exporters tends to shrink even further if other barriers to the U.S. market are considered. There is significant risk in developing foreign markets from the point of view of understanding consumption patterns, establishing distribution networks, spending capital to satisfy the potentially larger markets and general administrative costs required to expand. The reality

of accessing the United States market is a significantly different way of doing business both in terms of investment and in thinking. The Free Trade Agreement does not remove these barriers and possibly only serves to expose the difficulties facing Canadian businesses that have been asked to take the "leap of faith".

Another one of the difficulties in "taking the leap" in the context of the Agreement is the issue of scale-up required to satisfy an order by an American customer. It is very easy to forget that the population of the United States is ten times that of Canada and that their retailing institutions purchase and sell ten times the volumes of goods. This would require that a Canadian company that did receive a large agreement to purchase would more than likely have to capitalize heavily to satisfy the order. What would the guarantee be that the company's goods would be purchased again and again to support the costs of ensuring that the plant could initially satisfy the demand? Several scenarios might arise that are potentially disastrous. The purchaser could demand a lower price resulting in decreased profits for the exporting Canadian business. Another company could alter the product slightly, manufacture elsewhere and undercut the Canadian company that may have become dependent on these sales. If the company is successful with one product, it will be necessary to repeat the success to stay in business. The company will be in a situation requiring substantial investment in research, design and marketing as other companies tend to join the competition. These growth risks are part of the non-tariff barriers and decisions that face Canadian businesses as they are encouraged to export their wares. Although this scenario is clearly part of the nature of free enterprise and competition, there is no doubt that the majority of business in Canada, which is small, would stop to consider their destinies. Particularly when their very existence depends on their product's performance in an unknown marketplace.

Evaluating the effects of the Agreement on the Canadian manufacturing sector is difficult. Job losses have become a rallying point for labour in condemning the Agreement. The federal government finds any successful enterprise it can to promote the trade initiative. The situation has become a virtual battle of statistics. For example, Trade Minister Michael Wilson recently admitted that an "error" had been made in a government free-trade promotion brochure that claimed 181,000 jobs had been created from March to July (1992) as a result of the Free Trade Agreement, entirely ignoring the fact that 350,000 jobs have been lost since the Agreement came into effect in 1989 and that the majority of the jobs that have been created are part-time.²⁴ Furthermore, the brochure claims that Canada's exports have climbed as a result of the Canada-U.S. trade deal although it is not reported that "since the free-trade treaty went into effect in 1989, between 400 and 700 Canadian businesses have set up shop in Buffalo."²⁵ These companies continue to purchase supplies from Canadian suppliers but their purchases now show up as export statistics. Buffalo is only one U.S. city.

An economist with the Canadian Manufacturers Association noted that "we're losing our own domestic market very, very quickly. A part of that is because of plant closures and a part of it is because a lot of manufacturers have moved elsewhere".²⁶ At the heart of this problem lies a business structure that has been in a luxurious position of satisfying the domestic market without regard to efficiency and competition from external sources. It is a structure that has grown as a result of foreign capital and knowledge. The security of this insularity has been lost as American multi-nationals close the production facilities that provided jobs and incomes through backward and forward linkages into Canada's business community. Guaranteed sales have disappeared as the foreign firms that have remained in Canada have adopted trans-national attitudes of rationalising production and procurement. Parts, sub-assemblies, labour, and services are consistently being sourced globally relegating Canadian business to just another quotation.

The situation sounds desperate, and it is, because these conditions are the realities of the global playing field. There is also a danger that a continental government policy orientation may inadvertently cause domestic producers to ignore the Canadian marketplace that was once their own. What is urgently required is a cooperative public and private sector effort to understand the unique characteristics of Canada's lands and peoples and their place within the continental economic status-quo. Only then will Canada have the ability to recapture the dollars that are migrating to foreign producers. Making something for somebody will no longer amount to a successful venture as foreign competition specifically targets its products in satisfying and owning Canada's niche marketplace.

The fault here is less a lack of private-sector initiative than public-sector failure. If there's going to be a radical change in export culture in Canada, it has to start with Ottawa's devising an effective trade strategy. Instead, the federal government, and to a lesser extent the provinces, have hobbled the export sector with inconsistent and piecemeal policies. A coherent export strategy must recognize that *companies aiming to compete successfully abroad need stable and complementary economic policies at home.*

Implementing the FTA in 1989-90 while pumping up the Canadian dollar serves as a dramatic example of what happens when policies are out of whack. The federal government rightly brought Canadian exporters to a turning point with the successful negotiation of the FTA, but then followed up with an exchange-rate policy that let the dollar rise by 20% from the time serious negotiation over the FTA started to a high of 89 cents in October, 1991. There's no question that the high dollar, by making exports more expensive and imports cheaper, has hurt business.²⁷

Furthermore, Canada's inability to establish successful policies and trading relationships within and amongst its regions will play a significant part in considering strategies for competing successfully on an international basis. Both business, government, and the industrial design profession must redefine their views of the complexity of the Canadian

milieu in relation to the continental landscape as a step toward being internationally competitive. This may be one way of ensuring that "Buy Canadian" products doesn't result in Bye Canadian business.

Whether companies are branch plants closing their doors or Canadian companies folding their operations, it is clear that Canada's industrial infrastructure is being significantly reshaped according to the continentalist thrust of the Free Trade Agreement. Of significance to the discussion of the marginality of industrial design within this scenario is the fact that the Agreement does not acknowledge the industrial design profession in setting out the services that are covered for cross-border provisioning.²⁸ Industrial designers would be well advised to decide whether they are graphic artists, engineers or architects if they wish to enter the United States to work!

Continental rationalization

There is growing momentum among the business and political leaders' dialogue that is shaping the future of being in business in Canada. The view of the élite is that the Country is a subset of the greater and more important entity of the continent. The current North American Free Trade Agreement (NAFTA) negotiations prompted Otto Jelinek, Canada's minister of national revenue, to comment, "Freer trade and better co-operation are crucial to our three countries. We can't sit silently on the sidelines as Europeans dismantle barriers and create a more cohesive economic community. As the world rapidly changes, North America must change as well."²⁹ It is inevitable that this type of agreement will come to pass as it is to the advantage of large scale business that is supportive of the opportunities it represents. It is somewhat more difficult for small business to participate. Large companies such as Northern Telecom and Bombardier have had an inter-continental attitude for some time although they have had to reach a certain size to support this initiative. They

have also been proactive in establishing plants in the United States to protect themselves against "Buy American" campaigns and positioning themselves as good corporate citizens.³⁰ Furthermore, in doing business solely in Canada, most firms have found that:

Marketing costs, accounting for half of the value of the goods economy [including distribution costs], are in general higher than those in the United States; the field force is harder to control and communicate with; travelling costs are greater; more physical distribution problems are involved, and middlemen take on a greater importance, particularly in the more isolated areas; there is a tendency for less price uniformity; and marketing research, advertising and promotion are relatively more expensive.³¹

The sheer size of the country and the fact that the majority of the population lives in the industrial heartland has led to a further concentration of production and consumption in Central Canada. Therefore, exploiting the domestic market from coast-to-coast involves significant transportation costs which, in turn, raises the price to all consumers or lowers profits for a manufacturing enterprise. This, in turn, encourages business within the regions to satisfy their local markets. Larger companies have more than likely grown as a result of establishing effective distribution channels in the regions, if not purchasing them, and also have marketing departments larger than the number of total employees in a small business. When faced with the prospect of competing in the continental marketplace the choice for a small business owner is to either invest heavily in establishing methods and channels of distribution or to sell out to a larger firm that has established territorial presence and would like to add another product to its marketing mix. The rewards, however, are potentially great for small business in Canada in terms of emerging continentalism. The question is whether or not governments, financial institutions, and big business will acknowledge their voice and provide cohesive support mechanisms so that the small business owners have an alternative to selling out. At the same time, companies that have

an insular attitude will become statistics if they do not heed the emerging structure of an expanding market-place.

The most innovative view of North America as a potentially consolidated market was proposed by Joel Garreau who divided the continent into "nations" according to lifestyle differences among the regions rather than focusing on political boundaries.³² He claimed that traditionally defined regions were obsolete and that regional idiosyncracies are determined by numerous economic, social, cultural, topographical, and natural resource factors.³³ Garreau's analysis of these factors led him to divide the continent into "nine nations", or areas, six of which include Canadian space.

The New England nation comprises the six New England states and the Atlantic provinces. This area has few raw materials, few industries, many farms, high taxes, and high fuel costs, making it the poorest nation. Garreau notes the New England attitude that poverty is actually chic.³⁴ It is the oldest Anglophone region, whose inhabitants are elitist, environmentally aware, tolerant, intelligent, political, and fair. As a nation, New England is recovering from economic decline and developing into a post-industrial society with a focus on high-technology industries.³⁵

The Québec nation is characterized by history, tradition, ethnic pride, a homogenous culture, plentiful hydroelectric power, a diversified economy, and a high acceptance of new technologies. The inhabitants sense that they are different not only from the rest of Canada, but from the rest of the world. Their fervent independence of mind is summed up in a favourite motto, "maitres chez nous" (masters in our own house), and is also reflected in the individualistic belief that if Québec really wished to separate from Canada it could succeed on its own.³⁶ Appropriately, it is the only one of the nine nations that lies entirely in Canada.

The Foundry nation includes southeastern Ontario and is characterized by work, abundant water supply, and a population of 90 million people. Carreau sees the Foundry as a system of "urban prison camps," decaying infrastructures, heavy trade unionism, obsolete production technologies, racial friction, and as a nation that is losing population, jobs, and capital to other North American "nations."³⁷

The Breadbasket nation includes southeastern Saskatchewan, southeastern Manitoba, and southwestern Ontario. Its people are conservative, hardworking, religious, and ratifiers of social change. They are heavily dependent on agriculture and related industries and economies, so that fluctuations in world commodity prices can drastically alter this nation's fortunes.³⁸

The Empty Quarter nation includes the Yukon, the Northwest Territories, eastern British Columbia, Alberta, northern Manitoba, north and southwestern Saskatchewan, and northern Ontario. It is characterized by space, energy, and minerals. Its people still subscribe to a frontier ethic, and their numbers will be augmented by an influx of "immigrants" from the other nations. Although its sparse population makes this nation politically weak in votes, Carreau believes that it will experience radical changes in the next twenty years.³⁹

The Ecotopia nation includes western British Columbia and is characterized by an adequate water supply and renewable resources. They favour energy conservation and recycling and look to the Pacific Rim countries and Asia, rather than to Europe, for their future.⁴⁰ Its people prize their quality of life and want to be left alone.⁴¹

Carreau's view of the continent not only breaks from tradition but it is also timely considering the progress in the NAFTA negotiations and the existing Free Trade Agreement

between Canada and the United States. More research is needed to prove the theory in terms of specific nation consumption attributes and attitudes of target markets but it is this type of segmentation of North America that could prove beneficial to Canadian producers and designers in both domestic and international terms. Marketers, advertising agencies, real estate professionals, investment bankers, venture capitalists, academics and politicians alike have shown interest in this forward-looking typology.⁴² A preliminary study of the nations' relevance in the Canadian context showed promising results.⁴³

The continental marketplace

Inglis Canada, a high volume manufacturer and distributor of major appliances, relies on consumer research to understand market differences and trends.⁴⁴ The company has recently gone through what is called rationalization of production. Up to four or five years ago the domestic market was served by Canadian production facilities. The manufacturing plants in Canada have been closed in favour of automated assembly lines, lower labour costs and improved technologies developed by the American parent, Whirlpool U.S. It is common in times of financial stringency for a company to modernize the plants that are close to the home office. This typically streamlines operations and allows for stricter management of development programs. Furthermore, it should be realized the the scale of American manufacturing plants are such that they need only increase their production runs by 10 per cent, which decreases per unit costs, to satisfy the entire Canadian market. Also, Inglis' orientation is focussed on global markets through Whirlpool Overseas, a division of the United States parent. As a result of the production facilities moving away from the Canadian markets, there have been more resources allocated to consumer research to continually monitor Canadian consumption habits. The results of this research indicate that the nine nations theory has some merit.

In general, Inglis' research shows that there have been major changes in consumption patterns that are consistent across all regions. In the 1990s, consumers are showing conservatism and value orientation in their purchasing decisions. Colour has virtually disappeared from their portfolio as consumers vie for almond and white reflecting a desire for neutrality rather than succumbing to colour offerings that might go out of style. Bell Canada also reports the same conservatism and have dropped all colours from their portfolio of basic telephone offerings.⁴⁵

In their evaluation of specific market segments, Inglis has identified Québec in virtually the same terms as Garreau's description. They have a tendency to embrace new technologies and are early adopters of new features and styles. This is also the case in the communications industry where similar results have been experienced.⁴⁶ The Québec nation tends to represent a large portion of Inglis' high end sales. They generally have larger kitchens and use them more reflecting the social aspect of preparing and consuming meals that is indigenous to their culture. It is also interesting to consider that the white on white 'european-look' is not as popular in Québec, perhaps because of the inhabitants lack of identification with the former British Empire. Conversely, sales of this type of imagery are strong in primarily anglophone Ontario.⁴⁷ The relative cohesive nature of the Québec market is also due to a strong provincial feeling. "They lived where their ancestors had lived two hundred years before Confederation; were well aware that their civil law, language, and religion were unprotected outside the province; and were confronted by an alien population whose presence only reinforced their definition of themselves."⁴⁸

The sales patterns of microwave ovens provides further evidence to support Garreau's continental view. These appliances first gained acceptance in British Columbia, then migrated to Alberta, Québec, Ontario and eventually were accepted in the Maritimes. According to Inglis, this reflects the fact that the western provinces are oriented in a north-

south trading pattern as opposed to an east-west orientation. British Columbia, a portion of the Ecotopia nation, receives many of the innovations that capture the interest of the early-adoptive Californian market. In fact, the Ecotopia nation is the most vertically oriented segment of Garreau's theory. The lag in the Maritimes' acceptance is consistent in other appliance sales figures reflecting the lack of buying power in the area consistent with both nation and margin theory discussed earlier in the formation of the regions.

What is also evident is that companies are being forced to become efficient in their manufacturing decisions in order to best utilize the economies of scale inherent in mass production. Portfolios of multiple colours and product line variety are diminishing as manufacturers strive to control inventory costs and react to the conservative spending patterns of the 1990s. Producing a specific product efficiently is a sore point for Canadian manufacturers who tend to worry that if they don't satisfy as many tastes as possible by producing a variety of essentially the same product they will lose market share.⁴⁹ This practice of constantly changing tools and assembly lines is far from efficient and does not achieve the desired effects of achieving maximum gain from scale of production. This also reflects the small business nature of manufacturing in Canada which does not have the financial ability to support an 'in-house' marketing function. According to a Conference Board study, the three principal causes of new-product failure are inadequate market information, technical problems, and poor product introduction planning.⁵⁰ This weakness cannot be ignored as foreign producers become sensitive to and exploit regional niches.

The northern regions of Canada, although unique in their technologies and artifice, are generally not considered in economic dialogue. This is primarily due to the fact that there is virtually no manufacturing activity in the area and the population is sparsely scattered over vast territory, marginalizing the inhabitants so completely that they do not exist in any analysis of 'significant' business opportunity.⁵¹ However, the industrial design profession

might find inspiration in the North. Perhaps its consideration is worthwhile in pursuing the goal of self-determination.

The North comprises a large part of our country in area and certainly differentiates Canada from most nations. Not only do the North's physical, biological, and human attributes differ from those of other parts of the country, but also, as our national mythology suggests, its future will be different. A common belief is that our real identity and purpose lie in the North; and that a truly distinctive Canadian nationality will only be achieved through the development and settlement of our northern lands. Some say that the North is our last frontier, in which the old mistakes will not be repeated. Others claim that developments there will be new, different, and better. To the North lie not only our economic destiny, but also our moral and spiritual renewal.⁵²

The subject of Inuit and Dene abandoning technique and becoming dependent on the heartland's ways and means is a vast subject that deserves more research. However, clues to the Canadian industrial design spirit may lie in the notion that heartland initiatives have led to the marginality of the profession and a focus in the hinterland may offer a fresh view on possibilities. This notion will be considered further in examining the future of industrial design in Canada.

Competitiveness

The term competitiveness is probably too vague to describe the efforts that will be required to ensure that Canadian business prospers in the continental and global environments. It is not enough to say that goods must be made at a lower cost or their quality must be increased by the involvement of industrial designers in the development process. What will be required for survival is not only appropriate discourse in the face of emerging regional re-definition, but also a cooperative vision so that development efforts are not squandered.

The political and economic élite must heed the significance of Canada's place within the emerging continental marketplace and adjust its policy and strategic initiatives.

Freer trade, deregulation, and the modernization of competition laws are all important steps that have moved the country in the right direction. Now the federal and provincial governments must make an extraordinary effort to eliminate interprovincial barriers as expeditiously as possible.⁵³

The issue is not whether this should be an objective of the federal government. It is, in fact, an issue of whether the government of Canada may be required to take a nationalist or continentalist stance in dealing with the provinces in economic matters. Dismantling provincial barriers requires an interventionist policy which could incite the same divisive reaction (West vs East) that the NEP did in 1980.

Considering the current government's position of allowing market forces to prevail has shifted economic accountability to the provinces. This further threatens to erode federal-provincial relations as the federal government can make no guarantees regarding prosperity or depression within the regions of Canada. This non policy position virtually admits to the inability of Canadian enterprise or the federal governments' abilities to make decisions independent of external presence.

Foreign ownership is relatively high in Canada, although it has been declining since the 1960s. In the manufacturing sector, for example, approximately 45 percent of assets in Canada are foreign-controlled....Many of the strategic decisions in important Canadian sectors are made, based on the overall global strategies of parent companies. How the choices made by these parent companies with respect to the location of home base activities for all or segments of their business will evolve in response to changes in international competition is a critical issue for the Canadian economy.⁵⁴

The combination of the two political-economic realities does not seem to contribute to a level playing field and certainly does not inspire confidence in being able to determine a 'Canadian' approach to being competitive internationally. At the present time, even the inability to define federal-provincial relationships within the constitutional negotiations demonstrates the tenuous nature of defining the domestic environment for business to prosper. It is timely to believe that

the two issues of economic and constitutional development may well become systematically entwined, to the point where Canada as a whole may face the kind of existential crisis now faced by Québec. If economic stagnation leads to the development of support for more ambitious industrial strategies, with all that implies for international trade and foreign investment policy, Canada will have to face elemental questions of its social, cultural, and political identity....Economic and constitutional uncertainty would tend to fuse in a crisis which, ironically, would genuinely ask "What kind of Canada do we want in the year 2000?"⁵⁵

The 1992 World Competitiveness Report, which is a scoreboard of 22 industrialized and 14 newly industrialized countries has dropped Canada from fifth to eleventh place. Of interest is the fact that, for the first time, the constitutional issue became a factor in assessing Canada's ability to compete.⁵⁶ It would not be unrealistic for Canadian business to subscribe to the nine nation theory as a posture that provides the opportunity to focus and research continental regions with the security of knowing that Québec is distinct in any terms. Furthermore,

With the FTA providing a more secure access to the American clientele, Canadian firms can now integrate their North American sales effort by using the support industries of either country, and freely using the physical and human resources on both sides of the border. *They'll also hone their competitive instincts as they prepare for the tougher environment of international trade.*⁵⁷

What is not immediately apparent is whether Canadian manufacturing businesses and the industrial design profession will have the environment, support, or the energy to stay on their feet in the midst of increasing foreign presence within the domestic niches and regions that were once sacred. It is also evident that it is difficult for industrial design to develop a cohesive voice or presence because of the dependent nature of Canada's political and economic situation. The increasing trends toward continental and international marketing and design strategies will more than likely be initiated from foreign home offices, forcing Canadian manufacturers and industrial designers to re-evaluate their approaches to competing in the emerging international market-place.

Endnotes

¹Jock A. Finlayson and Ann Weston, *The GATT, Middle Powers and the Uruguay Round*, No. 5 in the series "Middle Powers in the International System" (Ottawa: The North-South Institute, 1990), 9.

²*Ibid.*, 16.

³Daniel Butler, "Why Exorbitant Farming Subsidies Have To End," *World Link: The Magazine of the World Economic Forum*, July/August 1992, 6.

⁴Mid-sized economies that are active GATT members have been identified as (in descending order of 1979 GNP): Canada, Brazil, India, Australia, Mexico, Sweden, Switzerland, Nigeria, Austria, Turkey, Argentina, South Korea, Indonesia, Yugoslavia, Norway, Finland, Hungary, Pakistan, Hong Kong, Singapore. Source: Finlayson and Weston, *The GATT, Middle Powers and the Uruguay Round*, 2.

⁵John H. Jackson, "The Crumbling Institutions of the Liberal Trade System," *Journal of World Trade Law*, vol. 12 (March-April 1978) as cited in Finlayson and Weston, *The GATT, Middle Powers and the Uruguay Round*, 4.

⁶Finlayson and Weston, *The GATT, Middle Powers and the Uruguay Round*, 52.

⁷KPMG Peat Marwick, "Canada: A Tradition of Trade," *World* (No. 1, 1992), 16, emphasis added.

⁸KPMG Peat Marwick, 17.

⁹Williams, *Not for Export*, 184.

¹⁰In an unpublished document *What Will The Free Trade Agreement Mean To You And To Canada?: An independent analysis based on the actual text of the Canada/U.S. Free Trade Agreement*, (Edmonton: July 1988), Marjorie Montgomery Bowker quotes that Brian Mulroney, when campaigning for the P.C. leadership in 1983 made the "disaster" comment when asked for his view on free trade with the United States. In the 1984 federal election, he, Joe Clark and Michael Wilson campaigned against free trade although the Conservatives made it their mandate while in power to secure such an arrangement.

¹¹Bowker, *What Will The Free Trade Agreement Mean To You And To Canada*, 7.

¹²Daniel Drache and Duncan Cameron, eds., *The Other MacDonald Report: The Consensus on Canada's Future That the MacDonald Commission Left Out* (Toronto: James Lorimer & Company, 1985).

¹³*Ibid.*, p.xx. This statement was originally made on November 19, 1984 before the Commission had even completed its work. This position was reiterated in a number of public statements. See *Toronto Star*, February 24, 1984, and *Globe and Mail*, March 5, 1985.

¹⁴*Ibid.*, p.xi. The commission could have taken the approach that the Berger Commission did in conducting a public inquiry into the Mackenzie Valley Pipeline. The Berger Commission financed native research so that they might be heard in the debate over resource development in the North. Berger's empowering of these groups was pivotal in the result of slowing down resource development and more importantly, proved that a "public" inquiry could be just that.

¹⁵Williams, *Not For Export*, 180.

¹⁶Canada, "Free Trade Agreement between Canada and the United States of America" (The Minister for International Trade), Vol. 2, Schedule—Part A, Article 1801: Application, 166.

¹⁷Fred Lazar, *The New Protectionism: Non-Tariff Barriers and Their Effects on Canada* (Ottawa: Canadian Institute for Economic Policy, 1981), 27.

¹⁸Bowker, *What Will The Free Trade Agreement Mean To You And To Canada*, 14.

¹⁹Lazar, *The New Protectionism*, 27.

²⁰Bowker, *What Will The Free Trade Agreement Mean To You And To Canada*, 14.

²¹I discovered that foreign subsidiaries could receive funds in a conversation with an officer of the Industrial Research Assistance Program (IRAP). There are statements in the funding application that state that the results of the research must be "generally in support of the Canadian economy"...the maintenance of jobs fulfills this requirement.

²²Lazar, *The New Protectionism*, 28.

²³*Free Trade Agreement*, Article 1902: Retention of Domestic Antidumping Law and Countervailing Duty Law, 172.

²⁴Eric Beauchesne, "Making Free With Free-Trade Statistics," *Ottawa Citizen*, September 19, 1992, C2.

²⁵*Ibid.*

²⁶*Ibid.*, Jayson Meyers.

²⁷Wayne Gooding, "Fear of Trying," *Report on Business Magazine: Globe and Mail* (April 1992), 40.

emphasis added.

²⁸Free Trade Agreement, Annex 1408: Services Covered by this Chapter, 130.

²⁹KPMG Peat Marwick, "Canada: A Tradition of Trade," *World* (No. 1, 1992), 16, emphasis added.

³⁰Winham, *Canada-U.S. Sectoral Trade Study*, 253.

³¹Bruce E. Mallen, *Marketing in the Canadian Environment* (Scarborough: Prentice Hall of Canada, 1973), 290.

³²Joel Garreau, *The Nine Nations of North America* (New York: Avon, 1981).

³³Gurprit S. Kindra, Michel Laroche, Thomas E. Muller, *Consumer Behaviour in Canada: Concepts in Management Action* (Scarborough: Nelson Canada, 1989), 191.

³⁴*Ibid.*, 195.

³⁵*Ibid.*, 195.

³⁶*Ibid.*, 195.

³⁷*Ibid.*, 194.

³⁸A discussion of how this nation can suffer from depressed world commodity prices is given in "America's Deflation Belt: Falling Commodity Prices are Turning the Heartland Into a Wasteland," *Business Week*, June 9, 1986, 52-60 as noted in *ibid.*

³⁹Kindra, *Consumer Behaviour in Canada*, 194.

⁴⁰*Ibid.*, 193.

⁴¹René Y. Darmon, Michel Laroche, John V. Petrof, *Marketing in Canada* (Toronto: McGraw-Hill Ryerson, 1989), 76-78.

⁴²Bernie Whalen, "The Nine Nations of North America: 'Provocative' Theory Gives Researchers a New View of Consumer Market Differences," *Marketing News*, January 21, 1983, Section 1, 1, 18, 19.

⁴³Harrie Vredenburg and Peter Thirkell, "Canadian Regionalism: A Marketplace Reality?" in *Proc. ASAC*, vol. 4, ed. James D. Forbes (1983), 360-70.

⁴⁴The majority of the information regarding appliance consumption patterns was furnished by Reg Gemmell (Marketing Department, Inglis Canada) in a telephone interview, Mississauga.

⁴⁵The colour palette now consists of very neutral colours- almond, white, cream, grey, black, and charcoal.

⁴⁶Bell Canada always introduces new products and features into the Québec market first. My own experience in consumer research regarding telephone shape and feature preferences is that the Québec respondents are significantly more inclined to choose adventurous shapes and colours than respondents in the Foundry.

⁴⁷There is considerable literature on the distinct nature of the Québec market. It is not my intention to identify all the attributes of the distinctions, but rather to make linkages in restating the concept of regions in Canada.

⁴⁸R. Cole Harris, "Regionalism and the Canadian Archipelago", *Heartland and Hinterland: A Geography of Canada*, ed. Lawrence D. McCann (Scarborough: Prentice-Hall, 1982), 469.

⁴⁹D. H. Fullerton, H. A. Hampson, *Canadian Secondary Manufacturing Industry* (Ottawa: 1957), A study of the Royal Commission on Canada's Economic Prospects, W.L. Gordon, Chairman, 72-79.

⁵⁰Hopkins, *New Product Winners and Losers* (Ottawa: Conference Board of Canada, 1980).

⁵¹The source was unpublished. The computer produced document showed that the population of the Northern Territories was zero! This was, in fact, due to the process of translating figures from a percentage of Canada's population. Real people became insignificant as a result of the mathematical process of rounding to significant digits. Beyond marginal.

⁵²Peter J. Usher, "The North: Metropolitan Frontier, Native Homeland?", *Heartland and Hinterland: A Geography of Canada*, ed. Lawrence D. McCann (Scarborough: Prentice-Hall, 1982), 469.

⁵³Michael E. Porter, *Canada at the Crossroads: The Reality of a New Competitive Environment*, A study Prepared for the Business Council on National Issues and the Government of Canada, October 1991, 98.

⁵⁴Porter, *Canada at the Crossroads*, 14-15.

⁵⁵Crispo, *Can Canada Compete?*, 156-157.

⁵⁶Harvey Enchin, "Canada Downgraded in Competitiveness Report," *Globe and Mail*, (June 22, 1992).

⁵⁷Wayne Gooding, "Fear of Trying," *Report on Business Magazine: Globe and Mail* (April 1992), 31.

INTELLECTUAL PROPERTY

Patents

Another important focus of investigation in examining the establishment of patterns that influenced underdevelopment of Canada's manufacturing sector and the resulting marginality of the industrial design profession is the area of patent ownership. Prior to the Patent Act of 1872, Canadians owned 100 per cent of domestic patents. The Act allowed foreign ownership and was intended to spur economic growth by introducing innovation into the domestic economy. By 1880, only 35 per cent of patents were owned by Canadians and by 1900 the level had dropped to 15 per cent.¹ It was clear to foreign holders of patents, primarily Americans, that they could make good profit for their innovations by licensing them to Canadian manufacturers and could thereby, maintain control over any of their neighbour's industrial development. By licensing foreign owned patents, Canadian manufacturers could take advantage of proven technology and could forego the expense of developing their own methods of production or processes. In fact, they became dependent on licensing agreements to stay abreast of competitor's technological developments. Businesses that did embark on research and development programs, which tend to be lengthy undertakings, found their efforts to be in vain as competitors took advantage of licensing developed technology to quickly penetrate and monopolize domestic markets. This meant that an investment of development time and resources was not a prerequisite to staying in business. The money not spent on research and development was probably divided between paying royalties and taking profits. This further contributed to internalized competition rather than an outward offering of products and innovation for foreign consumption. The Canadian manufacturing mind had not only turned inward to its domestic markets but now it was not required to think for itself, at least not in progressive technological terms.

There is another aspect to the effect of the Patent Act beyond technological dependency that is known as defensive patenting, or holding a patent so that others may not capitalize on a useful idea. There is a working clause in the Act which requires that patent-holders must attempt to commercialize their idea. Although a foreign owner is expected to behave in a responsible manner when holding a patent and/or setting licensing fees it is possible for an invention not to be 'worked' or commercialized for whatever reason. This keeps Canadian firms from being able to work on what might be a profitable or exportable venture. Unfair practice by foreign firms is virtually impossible to contest because of the substantial time and money that is required to proceed with litigation. Legitimate voices go unheard. With 95 per cent of patents currently foreign owned it would appear that the Patent Act has not only contributed to further dependence on foreign innovation, but has also restrained Canadian manufacturers from pursuing possible development. Consider that the United States owns 70 per cent of the patents granted in Canada but has utilized only 15.7 per cent of them.²

About 85 per cent of all licences obtained under Canadian patents, the majority controlled by U.S. interests, limit exports, in one way or another, by firms operating in Canada. Hence, in many instances, the Canadian patent system may be used by foreign patentees in a manner not in the best interest of the country that has granted them monopolistic privileges.³

It is also apparent that many foreign parents of Canadian branch plants administratively blocked Canadian exports by virtue of production agreements further contributing to the underdevelopment and dependency of the manufacturing sector.⁴

Trade related intellectual property rights

Of relevance to the inquiry into Canada's underdeveloped manufacturing sector is the implication of discussions within the Uruguay Round of GATT regarding trade-related intellectual property rights (TRIPs) which include patents, copyrights, and industrial designs. Pressure has been mounting from "the majors", primarily the U.S., to institute and enforce legislation that would afford them better protection for their goods and processes in foreign markets where copying is not uncommon. Their legitimate claim is that they have lost significant sales to producers of lower-priced goods that have come from countries with lesser guidelines of what constitutes plagiarism. This is clearly a case of the United States pushing its view of the world on the GATT members without considering that in some Eastern countries copying is an honour and a form of flattery.⁵ Furthermore,

There are profound differences between the Japanese patent-law system and [Western] systems. The goal of Western systems is to protect and reward individual entrepreneurs and innovative businesses, to encourage invention and the advancement of practical knowledge. The intent of the Japanese system is to share technology, not to protect it. In fact, it serves a larger, national goal: the rapid spread of technological know-how among the competitors in a manner that avoids litigation, encourages broad-scale cooperation, and promotes Japanese industry as a whole.

This approach is entirely consistent with the broader characteristics of Japanese culture, which emphasizes harmony, cooperation, and hierarchy.⁶

However, it must be kept in mind that lax policies on property ownership are also maintained in these countries and others to minimize prices in one's domestic market and to promote the diffusion of new technologies and therefore domestic industry. It is clearly to Canada's disadvantage that its patents are primarily foreign owned and that this new

initiative in GATT would even further reduce the opportunity for domestic technological development. It is also pertinent to note that the other international initiatives to which Canada is a signator such as the World Intellectual Property Organization (WIPO), the Patent Cooperation Treaty (PCT) and the Universal Copyright Convention (UCC) are currently taking a back seat to the TRIPs negotiations.⁷

More recently, it has been recognized that, with the increasing applicability of new technologies to a range of goods traded internationally, access to technology is strategically important for the development of internationally competitive export industries.⁸

Therefore, net technology-importing countries, such as Canada, are concerned that minimum standards of protection within the GATT, as suggested by the U.S., will have negative effects on their domestic and export initiatives. There is also concern that sanctions resulting from property infringement would be used to resolve disputes rather than being dealt with within the WIPO. It was noted by the North-South Institute that a number of countries have already been pressured to modify their intellectual property laws by U.S. bilateral action against their exports.⁹ Furthermore, Canada is facing pressure to change its compulsory licensing regime which maintains that a patent holder must work an invention on a commercial scale within three years. This is difficult to police because it is a simple matter for the patent holder to come up with a satisfactory reason for non-work or difficulties in achieving commercialization (defensive patenting). Of greater significance is the pressure that is being brought to bear on the Canadian system which is asking (read demanding) that imported goods be considered as a patent having been worked. This is clearly contrary to the intention of the compulsory working idea of encouraging manufacturing in Canada.

Enforcing property rights

A survey done by Price Waterhouse emphasizes the fact that the current intellectual protection policy practised in Canada does not correspond with the nature of the Canadian business milieu. The survey exposed the fact that "the use of intellectual property rights is positively correlated with increasing firm size."¹⁰ This more than suggests that the intellectual property rights policies that are being upheld by the government have no value for the predominantly small business community that makes up our manufacturing sector. The survey supports this observation in that smaller firms expressed dissatisfaction with the system in terms of the costs of registering and enforcing their rights. For small and medium sized business with limited resources, defending their rights against large and aggressive firms is a virtual impossibility.

Administrative and enforcement measures that create a structural disadvantage for small, medium-sized and Canadian business in general were outlined in a study of the Canadian intellectual property and litigation system by Gordon F. Henderson in 1991:

A constant theme throughout this study is that of the "David and Goliath" issue in litigation, namely, that the system may sometimes favour large and prosperous litigants without due regard to the merits of the case. I have been involved in intellectual property and indeed many other types of litigation for over 50 years. Some may say that I have acted for more Goliaths than Davids. If this is so, then many of my clients, both past and present, may be disturbed by this study, since it recommends several suggestions to redress this imbalance, which I believe actually does exist to some extent.¹¹

The report examines many facets of intellectual property and litigation including conflicts as a result of Federal and Provincial jurisdiction, expertise and education within the justice

system and arbitration. Of greatest significance to the manufacturing sector and industrial designers are the issues pertaining to patents and industrial designs.

A fundamental change was made to the Patent Act in 1987 which changed the system from a first-to-invent to a first-to-file system. This change was implemented to avoid the often lengthy and complicated matter of determining who actually invented what and when the achievement took place. The date stamp in the patent office is now the definitive measure of ownership. The effect of this change is not entirely clear as the current litigation proceedings are based on older patents.¹² It is significant to note that the United States is the only major country in the world that has maintained the first-to-invent system. This could have a negative effect on Canada's abilities to protect its intellectual property rights particularly in light of Canada's "David" status within the emerging continental economic infrastructure. Other changes to the Act are: patent applications are made public 18 months after they are filed rather than after a patent is issued, patent applications will not go to the examination stage until it is requested and, Canada has joined the Patent Cooperation Treaty (PCT). The PCT, which is administered by the WIPO, came into effect in Canada on January 2, 1992. It regulates the formal requirements that any international application must comply with, and provides Canadian inventors with a more practical and economical way of protecting their inventions. Using a single international application filed in Canada, inventors can initiate patent protection in some 50 member countries, including the United States, Japan and most of the European Community.¹³ As the initiative is recent (and in the shadows of GATT TRIPS) it is difficult to assess its effectiveness or comment on its effects on Canadian business except that it should reduce the costs to Canadians attempting to patent abroad.¹⁴

There are two disconcerting pieces of information exposed by the Henderson Report. The first is the potential of abuse in patent cases under the Rules of the Federal Court of Canada

(Rule 465(5)). This rule permits defendants in a patent infringement action to examine an assignor (the person assigning the patent to another party) where, in many cases, the inventor is a resident of the United States. The inventor in this case being an employee of an American company or directly owned subsidiary. The inventor would be considered to be outside the jurisdiction of the Federal Court and clearly demonstrates a lack of control over our judicial system with regard to intellectual property matters.¹⁵

The second disturbing finding of the report is in regard to the existing legislation that has to do with registering an industrial design. In Canada, a registrable industrial design is any original shape, pattern, configuration or ornamentation applied to an article of manufacture that appeals to, and is judged solely by, the eye, such as the shape of a table or the ornamentation on the handle of a spoon.¹⁶ The legislation is basically the same as it was when it was passed in England in 1842. In 1929 a judge, in passing judgement, declared that

The scope of this part of the Trade Mark and Designs Act [now the Industrial Design Act] is difficult of definite ascertainment or construction. It is a piece of legislation that seems flimsy and incomplete, ill-adapted for its intended purposes, and is seriously in need of amendment.¹⁷

According to the report, there has been much unnecessary litigation because of the ineffective statute, yet nothing has been done to correct the situation. There is no statutory definition as to what qualifies as a registrable design, the person who may apply is restricted, and the rights of vendors of an article bearing an offending design are doubtful.¹⁸ "One can only hope that a way is found to address this lamentable piece of legislation before yet another century passes by."¹⁹ And, "If Canada has any intention of serving its design community properly, this Act must be updated."²⁰

Finally the report confirms the notion that the Patent Act does not serve the best interests of the Canadian innovation and technology developing community. It takes approximately four years before judgement is rendered by the courts in Canada in a patent litigation and could cost the plaintiff at least several hundred thousand dollars, over \$1 million in the United States.²¹ The majority of Canadian small and medium-sized businesses can not afford the costs but also can't absorb the time factor involved in defending or pursuing patent litigation. Most smaller businesses do not have more than a single product or line that they rely on for income. It would obviously be difficult to make a major sale without complete and unchallenged patent protection on a product. Also, the speed of product development, the rapidity of obsolescence and the minor adjustments that can be made to evade litigation are all factors that also call to question the existing intellectual property registration framework and its usefulness to Canadian manufacturers.

The Henderson Report may identify accessibility and simplification as positive steps to remove the inequality but it is doubtful that its recommendations will make any difference to the fact that our intellectual property is virtually foreign owned. It also follows that there will need to be a review of the special consideration given to foreign applicants whether they are Canadian subsidiaries of foreign owned companies, foreign companies in Canada or foreign companies outside of Canada if there is to be any reclamation of Canadian technological intellect.

All of the recent talk about competitiveness seems to ignore the fact that this is a competitive world. Where there are winners, there are also losers. It is difficult for us to win in the long run in the game of trade related incentives for Canadians. We lack the critical mass to enforce our weight in this arena. However, Canadians innovate with the best of the international players and we must concentrate on this strength. Our intellectual property laws and their enforcement in our courts must reflect the new forces leading to a rapidly changing world.²²

The industrial design profession needs to consider the issues of property rights for two reasons. The first is that legislation can directly affect their rights to the work that they have completed. The second reason is that within the judicial environment, the profession does not have a significant voice regarding legal matters. Amending the Industrial Design Act in industrial design terms, rather than allowing untrained members of the judiciary passing judgement, may be a valid starting point in not only generating respect, but also bringing attention, to the profession's potential role in successful Canadian product development.

Endnotes

¹Williams, *Not For Export*, 23.

²O.J. Firestone, *Economic Implications of Patents* (Ottawa: University of Ottawa Press, 1971).

³*Ibid.*, 15.

⁴Williams, *Not For Export*, 1987.

⁵Jacques R. Guard, *Colloquium Cultural Subjects*, course manual (Ottawa: Carleton University Press, 1991), 15.

⁶Canada, *Protecting Intellectual Property: An Introduction to Japan* (Ottawa: Supply and Services External Affairs and International Trade Canada, Industry, Science and Technology Canada, 1991), 14.

⁷Canada, ISTC Working Group on Intellectual Property, "Intellectual Property Rights Issues for ISTC," internal document, October 1990, 2.

⁸Jock A. Finlayson and Ann Weston, *The GATT, Middle Powers and the Uruguay Round*, No. 5 in the series "Middle Powers in the International System" (Ottawa: The North-South Institute, 1990), 30.

⁹*Ibid.*, 30.

¹⁰ISTC Working Group, 9.

¹¹Gordon F. Henderson, *Intellectual Property: Litigation, Legislation, and Education: A Study of the Canadian Intellectual Property and Litigation System* (Ottawa: Supply and Services Canada-Consumer and Corporate Affairs Canada, 1991).

¹²*Ibid.*, 2.

¹³Canada, *Protecting Intellectual Property: An Introduction to Japan*, 1.

¹⁴Henderson, *Intellectual Property: Litigation, Legislation, and Education: A Study of the Canadian Intellectual Property and Litigation System*, 2.

¹⁵*Ibid.*, 20-21.

¹⁶Canada, *Protecting Intellectual Property: An Introduction to Japan*, 8.

¹⁷Henderson, *Intellectual Property: Litigation, Legislation, and Education: A Study of the Canadian Intellectual Property and Litigation System*, 56.

¹⁸*Ibid.*, 57.

¹⁹*Ibid.*, 57.

²⁰*Ibid.*, 98.

²¹*Ibid.*, 110.

²²*Ibid.*, 72.

CANADIAN BUSINESS

Canadian companies, having developed as part of a rigid inward looking economic structure, have been led to rely on borrowed or imported technologies. It is important to repeat that a major symptom of concentration on domestic markets is that it does not promote the growth of manufacturing sector companies so that they might have a chance of being competitive in global markets. As a result, the large proportion of small and medium sized companies in Canada has generally hindered the development of progressive manufacturing technologies and processes. 98 per cent of Canadian business is small business that has largely been sustained by the growth of the domestic market. This sector of the economy is the largest source of job creation and innovation but these companies usually don't have the investment capability or development expertise within their staff to identify, adapt or commercialize expansive techniques.¹ The owner or manager, being concerned with the day to day operations of running a small business, remains satisfied with enough profit to continue operations for another year. Also, many of these smaller companies are family affairs where happiness is working together to earn a living. The drive for profit and exploitation of global markets is not an attitude that is a priority in this environment and on further analysis it becomes clear that smaller business is continually marginalized by inappropriate policy and unattainable technologies. As mentioned previously most of these companies are also unaware of the value that an industrial designer can bring to a product development program.

The obvious question that analysis demands is *Why don't these companies export their goods?* Editorials trumpet that being globally competitive is the key to a successful business venture and that the opportunities afforded by the free trade agreement with the United States overshadow its drawbacks. What is not recognized is that the majority of Canadian manufacturing businesses are small by American and global standards and rarely

have the capital or the human resources to take advantage of this export philosophy. The goals and realities of such policies are in the hands of the political and economic elites whose minds are focussed on big business and American multi-nationals. In an aptly titled chart of "Canada's Export Elite", the subtitle states that "Going global's no gamble for Canada's leading exporters".² Of interest is the observation that nineteen of the top fifty Canadian exporters have a "Canada" suffix; an obvious extension of the American industrial empire.

Export is more than a gamble for the majority of business in Canada. Small firms tend to have limited product lines and are dependent on every sale they can muster as opposed to big business which can generally absorb the losses of a product failure. For small firms, export is a risk that could prove to be fatal if success is not achieved for whatever reason. To diminish this risk, small business must be well serviced and supported by a network of government, banks, and trading associations which is the case in Germany which also has a large proportion of small business.³ This philosophy of recognizing the importance of a country's small business sector is not in the minds of the elites who have essentially marginalized the balance of Canada's manufacturing sector by focussing on the larger industrial concerns. This neglect of smaller domestic manufacturers is well demonstrated by the free trade agreement which benefits few Canadians. Small manufacturers are willing but ill equipped to compete at the scale necessary to be profitable. Market information, export financing and support, and insurance programs of the Export Development Corporation are geared to larger firms while lip service is paid to small business.⁴ The majority of the manufacturing sector is pushed further to the margins when considering appropriating advanced technologies.

For example, the adoption of Computer Aided Design and Computer Aided Manufacturing (CAD/CAM) by the design and manufacturing community into product development cycles,

is seen as imperative if Canadian firms are to compete in global terms. A recent report by the Canadian CAD/CAM Council indicated that short term views had been partly responsible for introduction reluctance. The Council also noted that its advantages were not quantifiable by accountants in areas such as improved quality, shorter lead times to market and being an effective tool in the design decision-making process, therefore not being justifiable investments.⁵ Canadian firms that have implemented CAD/CAM in their manufacturing programs have reported average increases in productivity of 62 per cent, average increases in sales of 38 per cent and moderate to large improvements in quality.⁶ Of greater importance is that the majority of users taking advantage of these efficiencies tend to be larger firms. The investment required is a prohibitively large capital expenditure for small firms whose survival is dependent on short-term cash-flow maintenance in the month to month satisfaction of specific market niches. With fewer employees to carry this business activity load, even training in the utilization of this new technology becomes virtually impossible to fit into a business day. The bias of the technology that is determined by policy-makers to be necessary to compete in the global marketplace is advantageous to multinationals or large companies that have many groups working on a single project and require consistent and efficient information transfer. It is not appropriate to the majority of Canadian enterprise which remains dependent on satisfying the nooks and crannies of the domestic marketplace with relatively singular development paths. Their needs are outside of the central policies and ideals of the political and economic élites. This is consistent with the notion that these policies are consistently at odds with the realities of the Canadian business milieu.

Small business

The refrain of the need to serenade small business in Canada, albeit positive, is not without its problems. The attention that the small business sector of the Canadian economy has

been receiving lately is not an indigenous phenomenon. For example, 42 per cent of those in business in the United States call themselves 'self-employed'.⁷ Interestingly enough this American small business sector also creates proportionally more jobs than the traditional sectors. The Japanese have noticed the entrepreneurial revolution and are sending delegations to North America to find out how entrepreneurial attitudes are encouraged.⁸ What the Japanese won't find is how to sustain small business so that the ventures might develop the capacity to trade within the increasingly global marketplace. It is very easy to forget that large firms did not start large. They grew from small ventures and became large through competence, support, acquisitions and the economic climate of their growth period. Although small business activity is growing in Canada, Pat Johnson-Lavigne, former executive vice-president of the Canadian Federation of Independent Business, notes that:

[There is] an institutional attitude — from government and from labor too — that small businesses are messy. They can't benefit from the structures that are in place. It's like irresistible force meeting immovable object. There's a tremendous entrepreneurial explosion going on, but running up against all the barriers created in the fifties and sixties when we thought we were so damn affluent.⁹

The support system in Germany, for example, is based on differences in attitude that are part of their educational infrastructure. Their trade and craft apprenticeship system is not only technical skills-based but also includes entrepreneurship.¹⁰ For those that rise to positions of prominence in business and government, these values become translated into policy and accessible programs for smaller businesses.

The federal government is attempting to further understand the sector that, until recently, has been ignored. The Minister of Small Businesses and Tourism visited representatives of

small and medium-sized businesses in London, Fredericton, Montreal and Winnipeg. The abbreviated summary below captures the general sense of the comments of the participants and highlights the similarities between the four cities.¹¹ Many of the findings echo concepts presented previously.

Debt financing was seen to be an area of difficulty as banks are cutting back on credit to smaller firms, particularly working capital. The banks are low risk lenders and place too much emphasis on collateral requirements. The lack of competition among the banks was also seen in a negative light. The bankers responded by indicating that they are "open for business" and have not arbitrarily cut off lending to smaller firms. The bankers also reinforced the emphasis of good business planning which would help in seeking financing. Some entrepreneurs supported the bankers in this area, while others thought that the importance of longer term business planning was over-rated.

Equity financing was very difficult, if not impossible to obtain from venture capitalists. Local sources of money were seen as difficult to tap and that the Government could consider providing additional incentives to encourage the provision of equity capital to small firms.

The **Federal Business Development Bank** received mixed reviews – some thought that the Bank was doing a good job at supplementing private sector financial services, while others argued that the bank was not going far enough to help smaller firms.

The **Small Business Loans Act Program** was not being promoted by the banks and the banks require too much collateral under the Program even with the guarantee. It would be a valuable program for small business with some improvements.

Training is costly for small business and the risk that the newly trained individual will leave the business for greener pastures after receiving training is great. Entrepreneurs generally lack the time to train staff and to upgrade their own skills. Funding is available from Employment and Immigration Canada to help train unemployed or disabled individuals, but not for training of regular employees. Schools do not do a good enough job at training young people for technical trades and that there needs to be more recognition by Canadian society of those individuals in the technical trades. Small business is not adequately represented in current discussions regarding allocation of training funds and training services for both employees and owner/managers are somewhat limited outside of the major centres emphasizing the marginality of smaller enterprise.

Regulations and the paper burden placed on smaller firms by all levels of government was an expressed concern. It was also felt that Government programs, services, regulations and requirements must be much better coordinated.

Exporting support programs should only be available for those firms that have the capabilities to follow through with export opportunities and conversely smaller firms indicated that it was too expensive to go abroad and seek export opportunities with no guarantee of success. Strategic alliances and other forms of cooperation among small and large firms were cited as ways of overcoming the resource limitations of smaller firms. There was a clear view that 'free trade within Canada' was a necessity.

There was also a general response that there should be fewer government programs and these should be limited to creating and maintaining a favorable investment climate. Federal programs that are offered should be more effective.

Of note is the apparent inconsistencies of the respondents reflecting the diversity that is inherent in the small business community. As Pat Johnson-Lavigne says, "Starting a small business is a creative act – just as creative as art, just as creative as music. It's putting things together, and building a dream."¹² It seems, however that an attempt to respond to the marginality of small Canadian business and its ways is better than continuing inappropriate patterns of ignorance.

Michael Phillips, a small business specialist reacts to these initiatives with somewhat less enthusiasm

Both major parties now are scrambling to try to figure out what they should do about the small business revolution – these eight or nine hundred thousand little pygmies out there that actually are creating jobs. And they're no fun. You can't go in and give them a cheque for \$50 million, and have a well publicized ribbon cutting or something. They are hiring these people one at a time, or half a person at a time. All these part-time workers. How can you get any profile? That's what our politicians run on: profile.

We tell them, 'sorry guys, you're not going to be able to deal with me. You'll have to close down half of the department of regional industrial expansion [Industry, Science and Technology], because it's not necessary. Our guys don't want your program money.'¹³

While there seems to be a will to let the small-business option lead the transition into the future there are some objective doubts. Small business entrepreneurs are very good at making money, but are they an ingredient for developing a sustainable infrastructure within Canada that will promote industrial development? Are they not just appendages for the most part of big business?¹⁴ Is it wise to rely on a sector of the economy where failure is as common as success and where a lot of ideas are not necessarily 'good ones'? I have experienced non payment of design fees by a couple of small businesses that I was so

eager to help. These questions tend to be downplayed as government and institutions are being forced to listen to the smaller voice.

The overriding attraction of centering small business in economic policy is the notion that stand-alone young companies have the energy associated with

[Being] adaptive, flexible, and mobile; they can move quickly to take advantage of rapidly changing times and newly emerging opportunities. They are less encumbered by the rigid rules and regulations that make it so difficult for big business, big government, and big unions to change. Small-business people are more like ordinary Canadians, who themselves are seeking ways to cope with the transition [to a profit-motivated, rationalised global economy].¹⁵

The need for the industrial design community to be seen as more than just an emerging opportunity, but rather an established component of business success at any scale will be its forthcoming challenge. The profession may be required to pay more attention to the methods of providing design services to smaller businesses so that both parties will benefit. The objective of being seen as a value adding service rather than a development cost will be paramount in convincing potential clients to take advantage of the benefits of utilizing an industrial designer in the manifestation of their dreams.

2 OF 2

PM-1 3 1/2" x 4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

Endnotes

¹Wayne Gooding, "Fear of Trying," *Report on Business Magazine: Globe and Mail* (April 1992).

²*Ibid.*, 42.

³*Ibid.*, 35.

⁴*Ibid.*, 35.

⁵Canadian CAD/CAM Council for the Advancement of Computer Integrated Manufacturing, "Management in Crisis: Implementing Computer Integrated Manufacturing in Canada. A Report" (Ottawa: Department of Regional Industrial Expansion, 1986).

⁶Ruskenveld, *About Canada: Innovation in Canada*, 22.

⁷Pat Johnston-Lavigne, former executive vice-president of the Canadian Federation for Independent Business as quoted in: Dian Cohen and Kristin Shannon, *The Next Canadian Economy* (Montreal: Eden Press, 1984), 110.

⁸Cohen and Kristin Shannon, *The Next Canadian Economy*, 110.

⁹*Ibid.*, 111.

¹⁰*Ibid.*, 111-12.

¹¹The summary of the consultation sessions undertaken by Minister Hockin were supplied by one of the authors of the summary, Nancy Cormier, Special Assistant in the Office of the Minister.

¹²Cohen and Kristin Shannon, *The Next Canadian Economy*, 109.

¹³*Ibid.*, 113.

¹⁴*Ibid.*, 120.

¹⁵*Ibid.*, 120.

GOVERNMENT PROGRAMS

The government's direct involvement with industry is manifest through several mechanisms including tax concessions, programs designed specifically to promote industrial innovation, its own R&D activities, procurement and contracting-out, and university funding.¹ The programs are administered through various agencies within the Ministry of Science under the Minister who, along with the Minister of Small Business and Tourism, are under the auspices of the "Super-Minister" of Trade. The services are offered within a structure of program within agency, within Ministry, and have often been referred to as "alphabet soup" in describing the considerable acronyms and departments that seem to duplicate efforts in serving Canadian business.

On a positive note, there is a movement afoot within the federal bureaucracy to eliminate the soup and provide a one-stop shopping concept for the administration and dissemination of program information and funds. This would be particularly useful from the standpoint that smaller firms that inquire about the Industrial Research Assistance Program (IRAP), for example, are led on a string of phone calls. From a start at the Ministry for Small Businesses and Tourism, they are referred to the IRAP program administration of the National Research Council, of Industry, Science and Technology Canada, of the Ministry of Science, of the Ministry of Trade, of the federal government. Actually, access is fairly straightforward but the layers of management does seem to be somewhat inefficient. Any concept of streamlining operations to become more effective and accessible is a positive step towards efficiency.

In a parallel development, the Ministry of Science is slowly moving to encourage partnerships or "alliances"² rather than pursuing a grant structure of financing innovation. Financing through grants breeds techniques or processes that have been developed in

isolation from industry or the marketplace and are inappropriate for commercialization or consumer consumption. One of the cited examples in the Alliances report³ was the problem encountered when attempting to sell Telidon (early 1980s) which was a concept of networking suppliers and consumers to allow ordering goods from a home terminal or television. While the demonstrations may have been exciting and appeared to herald the dawn of a new era, in reality the infrastructure required to support such an effort was beyond achievability. Clearly the research efforts were not done in consideration of industry, end-users, nor with the logistics of commercialization in mind. The report echoes this viewpoint in finding that "federal research on technology with commercial potential should be conducted with industry involvement at all stages in planning: product design, development and marketing."⁴

Since the government funds approximately 30 per cent of R&D in Canada, it makes good sense that the results of this research should be available for commercialization by Canadian firms. Property rights have been an issue that has kept firms away from participating in government programs because the saleable results that were developed as part of government contracts belonged to the Crown. These ideas are rarely developed as there is not a significant commercialization thrust within the federal government. This may have been a disincentive for some companies to participate in these contracts.⁵ In order to eliminate the stagnation and encourage exploitation and commercialization of technology the federal government has recently announced that "contractors will now have up-front rights to intellectual property arising from government research and development contracts".⁶ Crown ownership is still justified in some situations and it is up to the departments or agencies involved in a contract to state clearly when an exception to the presumption of contractor ownership will apply. Perhaps the only drawback to this policy change is that companies may be chosen to perform contract work based on their abilities to potentially

develop or apply the resulting technology or process improvement. Details are currently being finalized.

There is considerable evidence collected by the federal government that seems to indicate that despite their promotion, programs are not reaching the most needy of Canadian businesses.⁷ "The majority of firms participating in federal Science and Technology programs are small to medium-sized enterprises, although the smaller firms (less than 50 employees or less than \$3 million in annual sales) are seldom in evidence."⁸

Considering that the majority of Canadian business has been classified as being of the smaller variety the problem deserves serious attention. The evidence in the Alliances report suggests that these businesses do not participate in federal science and technology alliances because they lack the technical capabilities and experience required for technology transfer and collaboration.

However, part of the difficulties in encouraging SMEs to participate in alliances may have stemmed from the criteria used to choose partners. Science-based departments and agencies have emphasized the suitability of the partner: the partner has the necessary financial resources, qualified personnel, or technical R&D facilities to complete the project successfully, as well as the ability or willingness to use the results. In order to minimize risk and ensure, to the degree possible, the successful completion of the project, government departments and agencies tended to seek alliances with organizations that were only weak in one of three determining factors: human, financial, or technical resources.

This means that the government has tended to work with the same small group of companies and research facilities that have already proven their ability to complete a project. The emphasis on suitability presents serious disincentives for those SMEs which lack more than one key capability... The requirements for partner suitability will not be relaxed...⁹

The report adds that "now more than ever before, the Government of Canada is looking for ways to build new partnerships with the small and medium-sized business community."¹⁰

It is not clear how these conflicting objectives will be managed in overcoming the fact that 90 per cent of Canadian small and medium enterprises in manufacturing or primary sectors are not involved in federally sponsored initiatives.¹¹ It is also clear that "red tape" continues to be a major complaint of business and impedes the formation of science and technology alliances between the federal government and private firms.

Ironically, one of the most positive changes affecting programs for manufacturers was the phasing out of the Industrial Design Assistance Program (IDAP). IDAP was run from Ottawa and would evaluate funding requests from other parts of the country based on information received in forms or by visiting the place in question. The obvious problem with this program was that the criteria for defining or evaluating the potential of the particular project is different in various regions of the country. A furniture manufacturer in Alberta is working in a far different marketplace than is one that is situated in Toronto but they were judged on the same terms. This problem of being out of touch with reality was corrected with the current Industrial Research Assistance Program (IRAP) which maintains regional offices allowing closer contact with the businesses it is meant to serve.

Industrial Research Assistance Program

IRAP is the most popular and perhaps successful program that is offered to small and medium-sized business. It is supervised by the National Research Council which is the government's largest scientific and technical research organization. Each year IRAP responds to some 30 to 40,000 technology-based problems and manages 6,000 R&D

projects. Its focus is mainly on smaller companies which is illustrated by the fact that more than 80 per cent of the firms that have been helped have fewer than 200 employees.¹²

There are several modes of assistance available under the program.¹³ The most simple is a Field Advisory Service which is more of a consultation and advice function. The Technology Enhancement Projects program which allows small and medium-sized companies (up to 500 employees) to enhance their technological capabilities, engage in small-scale R&D, receive technical or problem solving assistance by consultants or subcontractors. This could include hiring an industrial designer to work on a project. Visits to NRC labs, technology transfer information and the utilization of a university or college level engineering or science student are also among the services that may be covered by the program. IRAP will cover up to 75 per cent of the eligible project costs and normally covers salaries or the charges of subcontractors or consultants. In some cases, travel and accommodation costs may be supported. Support is limited to \$15,000 per project and to \$25,000 per applicant per year. This program is of greatest interest to smaller businesses that are not technically advanced as the paperwork and the language of the application instructions is easily understood. A drawback is that the amount of funds available is not significant in terms of the costs of developing a product.

The other IRAP mode, the Research, Development and Adaptation program, is aimed at firms that already possess technical capability. Support is available for the amounts of \$15,000 to \$350,000 and various daily and yearly limits apply. The documentation that is required to apply for this type of funding is significant and requires substantial knowledge in the areas of project management, technical detail of the particular project area, marketing expertise and forecasting. Perhaps this is a method of ensuring that the firms that will eventually receive the funding are not only serious but also have the capabilities to perform.

The relative complexity of the forms and information that is required to receive funding is difficult to provide in the case of designing a product that takes advantage of, or adapts a new technology. A small manufacturer needs to give information that it is not possible to have until significant research and preliminary industrial design is done. For instance, information such as sales forecasts and profit margins or product market penetration are not known until significant design research and preliminary concepts are completed and estimated in terms of manufacturing and distribution costs. Therefore, a business has to invest in the services of a designer and hope that the grant will come through to cover these costs. This, of course, marginalizes many small businesses that require such funds but do not have the capital required upfront to hire the expertise to enable them to be chosen or even complete their applications. It would also be unreasonable for designers to be asked to donate their work in the hopes that they might be compensated in the future. It is important to remember that there are limited funds distributed under these programs and that potential for success is currently more important than establishing need. The IRAP funding source is consistently overdrawn which means two things: there is not enough money being set aside for the program and that there possibly are companies that do not require funding and are treating the funds as a welfare system rather than a commercialization opportunity.

A surprising aspect of the program is the fact that funding may be acquired by branch plants or any foreign firm with a Canadian office. There are requirements that the technology should "be exploited for the creation of jobs in Canada, and generally in support of the Canadian economy",¹⁴ and that

The company shall apply the results of the project in *Canada for the benefit of Canada* and shall take all reasonable precautions to preclude prior development and exploitation of the results outside Canada unless it can be

clearly shown to NRC, and affirmed in writing by the NRC, that it is *advantageous to the company and Canada* to do otherwise.¹⁵

It was not possible to gather a clear definition of "for the benefit of Canada" and it seemed to be contradictory that results could be advantageous to an extension of a foreign firm and to Canada at the same time. Canadian firms that have benefitted from IRAP funding are well documented by the federal government and should be held up as successful examples of public and private cooperation. However, it is unconscionable that foreign firms are allowed the opportunity to take advantage of tax-payers' money as well.

What is evident within the structure of government funding is that the use of good industrial design is not promoted. While funds are accessible to offset the costs of developing a product, there is no encouragement to utilize the profession that many foreign firms take for granted. The industrial design profession's potential growth as a result of government funded initiatives is doubtful within the current system of funding allocation.

Endnotes

¹Ruskenveld, *About Canada: Innovation in Canada*, 25.

²For a literature review and discussion on government and private enterprise alliances see "Annex A: Detailed Overview on Federal S&T Expenditures and Activity," April 22, 1992, Industry, Science and Technology Canada.

³Canada, "A Guide for Business Partners: Science and Technology Alliances" (Ottawa: Industry, Science and Technology Canada, first draft-August 1991).

⁴Canada, "A Guide for Business Partners: Science and Technology Alliances", first draft, 42.

⁵Ruskenveld, *About Canada: Innovation in Canada*, 28.

⁶Canada, News Release-Minister for Science William Winegard, Ottawa, March 12, 1992.

⁷Canada, "Science and Technology Alliances: A Guide For Partners in Business" (Ottawa: Industry, Science and Technology Canada, fourth draft-September 21, 1992), 5.

⁸Canada, "A Guide for Business Partners: Science and Technology Alliances" (Ottawa: Industry, Science and Technology Canada, first draft-August 1991), 40.

⁹Canada, "Science and Technology Alliances: A Guide For Partners in Business", 6.

¹⁰*Ibid.*, 6.

¹¹*Ibid.*, 5.

¹²Canada, *Small Business in Canada-1991: From Best Practice to Competitiveness* (Ottawa: Supply and Services-Entrepreneurship and Small Business Office of Industry, Science and Technology Canada, 1991), 66.

¹³The following information is from National Research Council documentation about the Industrial Research Assistance Program received in an application package.

¹⁴National Research Council, Industrial Research and Assistance Program-Conditions of Contribution, Research, Development, Adaptation, April 15, 1992, condition 21.

¹⁵*Ibid.*, condition 23, emphasis added.

CANADIAN MANUFACTURING MENTALITY

Terms such as hewers of wood, diggers of rocks and assemblers of foreign products have been used to describe Canadian economic activity. This refrain is familiar to those who lament the underdeveloped status of Canada's manufacturing sector. Much of the industrial design community finds itself dreaming of a day that manufacturers will utilize their profession to the fullest in developing an indigenous manufacturing initiative. It is a defeated mind or paralysis that is currently affecting policy makers and participants in the quest to undo the shackles that have restricted the sector's growth.

In 1985, the Macdonald Report stated that: "Neither the federal government nor the provinces have blueprints for industrial policy. This commission reflects a fundamental reliance on market forces and private-sector enterprises as the engine of growth."¹

In light of the fact that the development of domestic enterprise is marginal to policy-makers and that market forces are controlled by foreign interests it seems difficult to believe that reliance on Canadian manufacturing activity could be a vehicle for economic growth. The idea becomes even more tenuous in recognizing the fact that foreign goods that pervade Canada's markets are produced in such high volumes that their low costs are prohibitive to domestic manufacturers attempting to participate in the marketplace. The technological systems and processes that are necessary to take advantage of mass production efficiency have taken years to develop inherent profitability. In the case of all of the industrialized countries this development has been aided by an outward looking industrial policy which emphasized independent technological development and aggressive export initiative. Since Canadian manufacturers have never competed on these terms, they do not have the capability of producing goods in beneficial volumes. Many studies have concluded that Canadian ingenuity and ambition stalls at the point of commercialization and that attention

should be paid to eliminating the roadblocks that face the majority of Canadian manufacturing effort.² What is probably more important is to identify what Canadian manufacturers do well so that these strengths can be encouraged.

Products that have been developed in Canada tend to originate from a need to master the land. The Canadian landscape offers severe challenge in this regard with respect to size, harsh climate and varied geography. The requirements and tools for living in this country are significantly different to those of the mass production exporters' and are, therefore, not serviced by imported goods. It follows that small specialized market niches appear that have been left for domestic manufacturers to fill. The enormous capital-intensive infrastructures of foreign exporters of mass-produced goods cannot afford to supply these niches. The capacity of their manufacturing plants would be unused and therefore non-profitable in any attempt to satisfy such small volumes. It will also become apparent that their product development minds are not attuned to satisfy the particularity of Canadian conditions.

It is evident that Canadians have performed admirably in responding to the landscape in designing:

communications equipment to bridge distances that separate population groups; short take-off and landing (STOL) aircraft for access to remote sectors with limited runway space; all-terrain vehicles to cross a variety of geographic situations; sleighs, or motorized sleighs such as snowmobiles, to cross snow or ice; recreational equipment for summer-time activities on lakes and seawater or for winter sports on snow and ice.³

There have been many other technological and design innovations that are truly Canadian but these land-related achievements offer the most opportunity for unmasking the

personality of the Canadian manufacturing sector. Although these market niches are marginal to mass production exporters they are central to Canadian manufacturing activity and offer a useful frame through which to view the salient characteristics of the Canadian mind. Specifically, the history of the development of the snowmobile fills this frame and helps to illustrate Canadian ideology in pursuing product development.

The Bombardier story

The snowmobile industry has been described as the automobile industry in microcosm. Both developments altered social patterns, changed landscapes and lifestyles, environments and economics.⁴ The impact of this invention in these terms is beyond the scope of this inquiry. What is most important is that a profile of the invention and development of the snowmobile provides a lucid description of Canadian manufacturing mentality.

Joseph-Armand Bombardier of Valcourt Québec is credited with developing travel over snow to commercial viability although he did not actually invent the snowmobile. In fact many inventors had been attempting and succeeding in developing a motorized method of winter travel. Bombardier built his first snow vehicle when he was 15 years old (1922) using parts scrounged from his father's barn and the motor from an old Model T Ford. The propeller driven sleigh moved, but it was extremely dangerous and was ordered to be dismantled by his father. Bombardier continued to tinker in his spare time with a view that a tracked vehicle might be a safer and more appropriate method of traversing snow covered ground.

In a parallel development, Carl Eliason of Wisconsin had patented a motorized toboggan in 1927. A few of these 2.5 horse-powered machines made it to northern Canada but had little impact on Arctic transportation systems. It is noteworthy that one of the reasons for

failure has been cited to be the lack of durability of the machine.⁵ This is significant to illustrate that 'only' the Canadian mind would understand that this criteria was important to successfully satisfy the rugged market niche. In 1937, Bombardier patented the rubber-cushioned drive wheel and track that eventually manifested itself in the first commercially viable snowmobile in 1939. The development that led to the patent is a tragic irony

On a snowy winter night in 1934 Bombardier was summoned from his garage where he spent evenings designing and building "snow cars", as he called them. His two year old son was suffering an acute appendicitis attack and required immediate hospital care in Sherbrooke. Ironically, the only possible way to travel the impassable snowy winter roads was by some sort of snow car which at this time was nothing but unassembled parts strewn about the floor of his garage.⁶ His son's death was 'the' reason that Bombardier zealously pursued and succeeded in perfecting a method for motorized travel across the snow. His ambition was based purely on recognizing the need for being able to travel in rural Quebec in the winter-time. His vision did not include sport, fashion, and championships which have become synonymous with the snowmobile industry. Tracing the development of the Bombardier company well illustrates an indigenous character of Canadian product development tendency.

Armand Bombardier successfully applied his patent in realizing production of the multi passenger B7 snowmobile.⁷ Its popularity grew rapidly as it allowed previously impossible winter travel. It became an integral part of the rural Québec social fabric through sales to doctors, milkmen, missionaries, rural telephone companies, school boards and salesmen. A friend of Bombardier's, Wilfred Charbonneau, gradually purchased three B7s upon receiving a mail delivery contract. Up to the 1930s, a full day of travel requiring three teams of horses was necessary to deliver mail from Waterloo to Valcourt across 18 miles of frozen terrain. It now took one hour. Rural villages that were virtually dormant

for the six or seven winter months could now communicate with each other and the outside world. "Life was wonderful then," Charbonneau recently recalled. "Mr. Bombardier's snowmobile revolutionized winter transportation, and life in winter in Québec's villages. It became just as eventful as in summer."⁸ Bombardier was selling almost 100 units per year, even though each was handmade. To this end, he maintained self sufficiency, inventing or modifying machine tools and parts in response to industry demands. He did not wish to be dependent on anybody in pursuing effective winter travel. His personal enterprise, renamed L'Auto-Neige Bombardier Ltée, grew to the point of needing sales people to cater to the province-wide distribution network in order to continue to provide the service and dedication that Armand Bombardier was known for. He hired many local people and trained them in the ways of manufacturing and mechanical techniques; his expanding prosperity contributing positively to the economy of Valcourt.

The B7's success did not change Armand Bombardier who had achieved significant standing in his community. Fame and fortune were not important to him and he continued to tinker from his roll top desk in the middle of the shop floor. His relentless pursuit of perfection and his direct contact with the users of his products in the niche market environment led to other successful multi-passenger snowmobiles. The war years brought a deluge of defence contracts including troop carrying and armored versions for Army use in Norway. By the end of the war, Bombardier's company had grown from a large machine shop to a fair-sized factory. Customers came to him in large numbers from anywhere that work needed to be done on snow covered ground. His ingenuity and compulsive desire to solve problems led him to diversify his tracked vehicle offerings. Bombardier vehicles could be found in the Sahara Desert, Peruvian sugarcane plantations, Alberta oilfields and in logging operations from B.C. to Minnesota. His earnest desire to design practical and useful vehicles to satisfy the needs of people living in harsh conditions

had, by the late 1950s, turned Bombardier Ltée into the most impressive—in fact, almost the only—example of Québécois enterprise Making It Big.⁹

Throughout the 1950s Bombardier had envisioned a small, personal tracked vehicle that might be used by trappers and game wardens in the Canadian north. In the spring of 1959, he took a bright yellow prototype¹⁰ to the wilderness of Northern Ontario where a friend, Father Maurice Ouimet, had a mission near James Bay. The Father was the world's first owner of a Ski-Doo¹¹ and could now travel in three hours what used to take him three days and three nights by dog sled. In the same year Bombardier began manufacturing the Ski Doo and sold over 200 vehicles at \$1,000 each to prosperous Canadians who had disposable income to spend on recreation. Bombardier discovered something curious: many of his customers didn't *need* a Ski-Doo; they were buying them, and driving them, for fun.¹²

It is at this point that we identify a fundamental characteristic of the Canadian manufacturing mind, in this case Armand Bombardier's. He was an ingenious inventor who tackled problems and satisfied needs with his creations. Snow travel was a problem for the people of rural Quebec and he tragically applied himself to solve it. He did not apply his genius to wondrous inventions with goals of fame and wealth. From his deathbed in 1964 he dictated a testament to his heirs and cautioned: "Never forget that our company saw the light of day in a small garage in Valcourt, and it was the people of our village and the surrounding areas who helped me make it what it is today. Always be humane in your relations with your employees." Weeping, Armand Bombardier signed the testament.¹³

Had Joseph-Armand lived, the company quite possibly would not have been as successful as it turned out to be. An unwritten law decrees that the

man who starts a company is almost never equipped to carry it beyond a certain stage of growth. Joseph-Armand Bombardier, although he was one of Canada's great inventors, was not one of our great managers.¹⁴

The management team that Bombardier had selected before his untimely death was faced with uncontrollable growth, having sold 8,000 snowmobiles in that winter of 1964. They had spent only \$30,000 in advertising which, in keeping with the tendency of satisfying need and rejecting the manipulation of want, Bombardier had vehemently opposed. The company, now managed by progress and profit oriented leadership, went on to exponential success more than doubling its sales for eight consecutive years. Laurent Beaudoin, the chairman of Bombardier, built the company on an export strategy which instigated a scale-up of the production facilities. He correctly realized that the domestic market was not large enough to sustain long-term profitability and would not allow for long term planning and capitalization in order to be competitive internationally. The needs oriented approach of the founder was not appropriate in the invention and technological development stress required to compete against others. This market oriented philosophy allowed Bombardier Ltée to avoid what most certainly would have been fatal competition against larger foreign firms. In fact, the Canadian snowmobile market is now dominated by foreign corporations. Bombardier Ltée became a public company in 1969 and diversified into other areas of transportation technology. The company is currently in the eleventh position of "Canada's Export Elite" with annual sales of \$2.8 billion.

The Bombardier story is unique in that a product that resulted from the satisfaction of need has revolutionized the lives of many people.¹⁵ The company is rightly celebrated for its commercial development and export prowess. However, discussion in these terms tends to overlook the fact that Canadian manufacturing mentality consistently shows excellence in satisfying needs as an objective of utilizing mass production techniques. The notion of

dealing with the land remains a marginal or needs oriented technique. For example, the accounts of bush pilots' modifications to their planes which led to the development of DeHavilland's STOL aircraft are marginalized by corporate and political promotion of the ability to navigate into urban business centres.

An example of the development of an industrial design that was prompted by recognizing a need is the case of the Actar 911, an innovative, inexpensive CPR (cardio-pulmonary resuscitation) mannequin. The design allows a greater number of people to receive the training required to potentially save a life. The Actar 911 received the top award in the Industrial Design category of the 1991 Canada Awards for Business Excellence for its innovative approach in promoting access to CPR training and its design merit. Its success in both Canada and the U.S. has prompted vigorous lobbying by American manufacturers in an attempt to dismiss its positive attributes. The scale of operation that is required to satisfy demand has grown to the point of requiring significant sales, administration, and distribution support. The husband and wife design team that developed the product have recently sold their company to American interests. They did not have the expertise, capital, or the energy to tackle the American market and felt that their fun was over and there were other needs to be met.¹⁶

It is not clear what a Canadian product image is. The desire to satisfy needs as an expression of manufacturing mentality rarely manifests itself as a product for export and is not enough to hold up as an identity. In most cases, the products that have been manufactured in Canada are as a result of a dependent industrial climate rather than being born of indigenous initiative. However, the use of industrial design may be the bridge required to mass-produce the techniques and artefacts of satisfying needs. The question remains as to whether an environment will develop to allow Canadian industrial design and, therefore, its product export identity to flourish.

Endnotes

¹"Report of the Royal Commission on the Economic Union and Development Prospects for Canada" (Ottawa: 1985).

²Industry Trade and Commerce documents: I.A. Litvak, and C.J. Maule, "Canadian Entrepreneurship: A Study of Small Newly Established Firms" (Ottawa: Carleton University, Dept. of Economics, 1971); I.A. Litvak, and C.J. Maule, "A Study of Successful Technical Entrepreneurs in Canada" (Ottawa: Carleton University, Dept. of Economics, 1972); "Robert G. Cooper, "Why New Industrial Products Fail" (Montreal: McGill University, Faculty of Management, 1975); John A. Watson, "A Study of Some Variables Relating to Technological Innovation in Canada" (Edmonton: University of Alberta, Faculty of Business Administration and Commerce, 1975).

³Peter Day, and Linda Lewis, from the introduction, *Art in Everyday Life: Observations on Contemporary Canadian Design* (Toronto: Summerhill Press/The Power Plant, 1988).

⁴Alexander Ross, *The Risk Takers* (Toronto: Maclean-Hunter Ltd., 1975).

⁵Perti J. Peltó, and Ludger Müller-Wille, "Snowmobiles: Technological Revolution in the Arctic," *Technology and Social Change*, H. Russell Bernard, and Perti J. Peltó, eds. (New York: The Macmillan Company, 1972).

⁶Thomas Carpenter, *Inventors: Profiles in Canadian Genius* (Camden East: Camden House, 1990).

⁷Echoing the simplistic view of product development and Bombardier's ways; B for Bombardier, 7 for seven passengers.

⁸Ross, *The Risk Takers*, 155.

⁹*Ibid.*, 155.

¹⁰The colour, according to a former Bombardier employee, was chosen for no other reason than the fact that there was a can of yellow paint used to touch-up school buses in the corner of the shop; opened and not to be wasted!

¹¹The original name that accompanied the patent application was Ski-Dog making reference to dog sleds and the skis on the front end of the design. Legend has it that a patent registrar misread the application and the Ski-Doo became the official registered name.

¹²Ross, *The Risk Takers*, 158.

¹³*Ibid.*, 153.

¹⁴*Ibid.*, 161.

¹⁵Numerous studies have been undertaken regarding the effects of rapid change resulting from the introduction of the snowmobile as a micro-technology; particularly with respect to northern indigenous populations. For example: Perti J. Peltó, *The Snowmobile Revolution: Technology and Social Change in the Arctic* (Prospect Heights, Illinois: Waveland Press Inc., 1978).

¹⁶Richard Brault and Dianne Croteau were interviewed several times during the first half of 1992 both in person and by telephone in Ottawa and Toronto.

THE FUTURE OF INDUSTRIAL DESIGN IN CANADA

In a recent survey of the profession it was clear that industrial designers are well aware of their marginality within the industrial infrastructure of Canada and more appropriately, North America.¹ The major issues and concerns that came out of the supply side survey were primarily structural in nature and reflect the concepts discussed in this paper. The lack of awareness and recognition of the profession, the low demand for services, the need for educational standards and resources, and the lack of government support were all predictable responses. It was also mentioned that the profession's inadequate attention to marketing was a contributor to the previous problems mentioned and that the perceived conservatism of Canadian manufacturers was not helping matters any. It could be that industrial designers are creating expectations vis à vis European consumption patterns and manufacturer's design awareness rather than being in closer touch with the realities of the Canadian manufacturing sector. What is more important is that in comparing the results of the demand side (manufacturers) with the supply side (designers) it is very clear that there is a lack of knowledge about each other. This lack of connection is one area that needs to be addressed by both concerns.

Industrial designers don't seem to be able to tackle their marginality within the manufacturing infrastructure. The method of attacking this situation seems far-flung from the skills that are shown in solving problems for industry that result in successful products. It is odd that this ability to solve problems has not been applied in a consistent manner with a particular mission or initiative of their self-determination. There also seems to be a dream of Canadian industrial designers of designing a product just like the ones in the European design magazines. Practising design in Canada may not mean winning international design awards that are judged on terms that are not of the same nature as the Canadian business environment. It is possible to design a company, to design a school, to design a way of

thinking and even to design the industrial design profession within the underdeveloped Canadian manufacturing sector.

There is a growing privately led movement in Canada promoting the importance of design as a competitive tool as well as an expression of Canada's culture and society.² In 1993 a forum for design exhibitions, programs and publications on the role of design in our lives will open in the former Toronto Stock Exchange and will appropriately be named the Design Exchange.³ The Group for Design in Business (GDB) in Toronto, Design Vancouver, Alberta Design Works and Documentation Promotion in Montreal are communicating the same message to business, government and the general public—design is critical to the economic and cultural competitiveness and survival of Canada.⁴ Although the intentions are good and the concept of strengthening ties between industry and government makes sense there is a melancholic resonance to the methods of promoting the profession. These efforts may fall short primarily because Canadian industry does not speak the same language as what is being flaunted and it is hardly clear what level of government, never mind which department, should be serenaded. A positive long term development is the documentation of successful Canadian design/manufacturing ventures that will help to illustrate possibilities to the uninitiated. These case studies also serve to begin to establish a body of knowledge, ensuring that the profession develops a history as a basis for developing the future.

The Group for Design in Business in Toronto is energetically promoting design through the use of case studies and exhibits. In a recent exhibit entitled *Designing For Product Success* examples showed how innovative design could overcome price competition, change a company's image, help a company reach new customers in a saturated market and much more.⁵ However:

The thrust of the...exhibition was international and the case studies were, for the most part, products developed by multi-nationals. While examining how Black & Decker or Braun have resolved their designs to address pricing or space requirements is inspiring, for most Canadian manufacturers the multi-national picture is still pretty remote.⁶

The GDB was also instrumental in organizing *The Financial Post Magazine's* Design Effectiveness Awards which judges designers' work on its commercial effectiveness. According to Deborah Azulay, the chair of the Awards, "This program will prompt the business community to sit up and take notice of design as a means by which to improve [their] business, not design in terms of having pretty pictures on the wall."⁷ The awards cover a multitude of design areas including: product design, exhibit design, corporate identity, retail environments, literature and architectural design. Hopefully this broad attempt at promoting design's importance does not end up being seen as a heartland back-patting exercise by the margins of Canada's business and design community.

These examples of self promotion illustrate the profession's current efforts to develop design's existence in Canada's industrial infrastructure. The question arises as to whether or not the message will be heard by the manufacturing sector that is made up of small business, underdeveloped industrial capacity, inappropriate government fiscal policy, a fractured domestic marketplace and suffocating foreign ownership. These realities need to be considered by designers if they are to define their place in Canada's future. As Danesco's chief designer Koen de Winter has said:

There is no future for Canadian design if it's not Canadian design. We should get rid of all these European models ...The way Canadian industry and distribution is structured should influence how we exercise our profession and as a consequence what we learn in design schools. And part of it is in the fact that in small companies you have different abilities and

skills and probably a different set of brains too. You have to be closer to the entrepreneurial core of the company, whether that is a person or several people...⁸

For their part, design schools in Canada are continually re-evaluating their programs to meet the changing realities of manufacturing activity. The School of Industrial Design in Carleton University consistently demands that final year students be involved with industry in their thesis projects. This benefits the students in acquiring a working knowledge of "the real world". It also serves as an education for industry which isn't necessarily aware of the profession and what it does. Many of the colleges that offer industrial design training also create links into the business community by inviting designers and business professionals alike to teach courses in their programs. The industrial design program in the Faculty of Environmental Design in the University of Calgary has a very clear mandate of teaching design appropriate for the regional characteristics of Alberta's manufacturing companies. This initiative demands that the students become more familiar with entrepreneurial activity, lower volume production techniques and business acumen which are all components of the region's manufacturing activity. As well, all the Canadian design schools could increase instruction regarding the notion of adding value to Canada's abundant resources and their by-products in secondary and tertiary manufacturing initiatives

A very positive development at the junior high school level, grades seven to nine, is the replacement of the Industrial Arts program. Students were generally expected to mimic their instructors' creations by using industrial machines. The course has been replaced by a "Design and Technology" program which promotes the design process and creative problem solving enroute to making something on those same machines. As the authors of the text, *Design and Technology*, tell the students in their preface, "With the hands-on approach, you will be able to plan creatively, question thoughtfully, work safely, learn

through active participation, and expand your knowledge in a gratifying process."⁹ Perhaps this is the start of an "aware and educated" consumer base that will eventually demand quality objects as was the case in Scandinavia. This type of course is also significant in that Canada's workforce will need to be versed in a "thinking while making" attitude in the future.

The shifting focus in designing, away from machines and objects to processes and people, has been called the 'Human Age' by several major Japanese high technology companies. The phrase is used by Japanese industries to describe *the growing importance of people's needs* over technological innovations in determining the course of the product planning process...the major (Japanese) companies are developing a sophisticated analysis of the future which is becoming increasingly user conscious; they are looking to a period where advances in electronics are consolidating rather than advancing.¹⁰

This initiative sounds much like the notion of fulfilling needs as a design goal that has been followed by successful Canadian companies such as Bombardier, De Havilland, and Actar Airforce.

Finally, the geography of Canada has forced the development of valuable techniques and products that have been internationally successful. The realities of living in an extremely diverse landscape and climate will continue to inspire worthwhile product ventures.

An observer from Mars would wonder why, with all the expenditure on both technical education and R&D, there is no single institute devoted exclusively to the problems of living in the Far North...The observer would also wonder why there is still no entirely satisfactory car for winter conditions, even though a market may well exist in the northern states of the U.S.A. for a substantial number of such vehicles...For that matter, he could

ask why it took immigrant Scandinavians to show us the superiority of skis over snowshoes for moving in the bush.¹¹

Also, it is only recently that high efficiency wood stoves have been developed and manufactured in Canada. Not only do we have a lot of fuel available, it is also a sustainable and naturally regenerating resource. Building systems appropriate for Canada's climate and other heating technologies are certainly areas that have not been exploited to the extent that one might expect; particularly when there are time tested principles and techniques that have been used by the Natives in the North for years. It is possible that industrial designers may need to be educators about such possibilities as a way of ensuring their futures.

Centering the margins

The lack of use of industrial design by Canadian manufacturers is understandable when we consider the realities of the Canadian industrial milieu. The development of the profession itself did not find its roots in the way people made or did things as was the case in Scandinavia. Industrial design in Canada was born in an atmosphere of attempting to educate people about design through exhibits and political initiatives. The significant foreign ownership of Canada's productive instruments and intellectual property has resulted in potential design work being transplanted to home offices, primarily in the United States. The sheer size of the country and its regional heartland/hinterland economic structure has also discouraged the development of sustained design and manufacturing activity. The lack of power in the international trading arena has further contributed to the erosion of Canadian manufacturing initiatives and, hence, the need for industrial designers. Ineffective legislation regarding industrial design and property rights has contributed to the profession's marginality in both physical and psychological terms. The realities of the

relatively small size of Canadian businesses and the lack of funding promoting the use of industrial design have continually plagued the profession's involvement in Canadian product development programs. Most importantly, industrial designers in Canada need to understand that they are not practising in Europe where craft-based techniques evolved into high-volume manufacturing and a quality-conscious domestic marketplace.

Understandably, industrial design has been unable to make an impact on the dependent Canadian manufacturing sector. Hopefully, the current private sector and education initiatives will contribute to an environment in which industrial design will become cultural expression and manufacturing will be the manifestation of satisfying needs as exportable artefacts.

It is beyond lament that the need-driven development of products and the aspirations of Canadian industrial designers and small business are invisible to the political and economic elite that formulate policy. Export strategy that ignores this heart of Canadian manufacturing is destined to promote further dependence on foreign products and technologies and the perpetuation of a commodity mentality. The unharnessed export potential of successful innovation by domestic manufacturers cannot be ignored any longer as small businesses close their doors for good. The inspiration and ground necessary for the industrial design profession and the manufacturing sector to develop will only appear when these enterprises are seen as central to Canada's place in the global competition rather than being marginalized by the institution of big business policy that prolongs economic and technological dependence.

Industrial designers are adept at finding solutions when faced with conflicting pieces of information. The ability to define solutions may be the profession's saving grace in attempting to establish a place within the challenges of the Canadian economic landscape.

Defining an indigenous spirit and continuing to research realities and possibilities will contribute to centering industrial design within the marginal manufacturing sector. If this goal is not taken seriously, Canada will continue to cut down its trees with Swedish chainsaws and work its fields with American tractors.

Endnotes

¹Canada. *National Industrial Design Survey: Demand Side*. (Ottawa: Department of Regional Industrial Expansion, 1988).

²Lee Jacobson, "Having Designs on Success," *Globe and Mail*, August 20, 1991.

³Ibid.

⁴Ibid.

⁵Nelda Roger, "Success Through Design: A Canadian Triad," *Azure: Design Architecture & Art*, Vol 8 No. 77 October 1991, 12.

⁶Ibid., 12.

⁷Anne Bokma, "Good Design Makes Good Business Sense," *The Financial Post Magazine*, May 1992, 38.

⁸Ibid., 22.

⁹Kathy Browning, George Heighington, Virgil Parvu, Douglas Patillo, *Design and Technology* (McGraw Hill Ryerson: Toronto, 1993), v.

¹⁰Tom Mitchell, "The Product As Illusion", *Design After Modernism*, ed. James Thackara (London: Thames and Hudson, 1988), 209.

¹¹John H. Walsh, *Understanding Technology and Canadian Public Policy* (Amshe Communications Ottawa, 1987), 103-4.

SELECTED BIBLIOGRAPHY

- Anderson, F.J., *Regional Economic Analysis: A Canadian Perspective* (Toronto: Harcourt Brace Jovanovich, 1988).
- Archer, Bruce, *Design Awareness and Planned Creativity in Industry* (Ottawa: Office of Design, 1974).
- Atwood, Margaret, *Survival: A Thematic Guide to Canadian Literature* (Toronto: Anansi, 1972).
- Barnes, James G., Montrose S. Sommers, *Current Topics in Canadian Marketing* (Toronto: McGraw-Hill Ryerson, 1978).
- Bernsen, Jens, *Design: The Problem Comes First* (Copenhagen: Danish Design Council, 1983).
- Bowker, Marjorie Montgomery, *What Will the Free Trade Agreement Mean to You and to Canada?: An independent analysis based on the actual text of the Canada/U.S. Free Trade Agreement* (Edmonton: July 1988), unpublished document.
- Bowles, Roy T., ed., *Little Communities and Big Industries: Studies in the Societal Impact of Canadian Resource Extraction* (Toronto: Butterworths, 1982).
- Prodic-Janine, *The Political Economy of Canadian Regionalism* (Toronto: Harcourt Brace Jovanovich Canada, 1990).
- Browne, J.J., *Ideas in Exile: A History of Canadian Invention* (Toronto: McClelland and Stewart Limited, 1967).
- Browning, Kathy, et. al., *Design and Technology* (McGraw-Hill Ryerson: Toronto, 1993).
- Bryan, Ingrid A., *Economic Policies in Canada* (Toronto: Butterworths, 1986).
- Cohen, Dian, Kristin Shannon, *The Next Canadian Economy* (Montreal: Eden Press, 1984).
- Crispo, John, *Can Canada Compete?* (Toronto: Hemlock Press, 1990).
- Canada, "Consultation Document: Canadian Design" (Ottawa: Presented by The Department of Communications and The Department of Industry Trade and Commerce, March 1991).
- Canada, "Free Trade Agreement between Canada and the United States of America" (The Minister for International Trade), Vol. 2, Schedule—Part A, Article 1801.
- Canada, National Industrial Design Council, *How the Industrial Designer Can Help You In Your Business* (Ottawa: 1949).
- Canada, *National Industrial Design Survey: Demand Side* (Ottawa: Department of Regional Industrial Expansion, 1988).
- Canada, *Protecting Intellectual Property: An Introduction to Japan*, (Ottawa: Supply and Services-External Affairs and International Trade Canada, Industry, Science and Technology Canada, 1991).
- Canada, *Small Business in Canada-1991: From Best Practice to Competitiveness* (Ottawa: Supply and Services-Entrepreneurship and Small Business Office of Industry, Science and Technology Canada, 1991).
- Carpenter, Thomas, *Inventors: Profiles in Canadian Genius* (Camden East: Camden House, 1990).
- Canada, *National Industrial Design Survey: Demand Side* (Ottawa: Industry, Science and Technology, 1989).

Collins, John Bruce, *Design For Use, Design For The Millions: Proposals and Options of the National Design Council: 1948-1960*. An unpublished thesis submitted to the Faculty of Graduate Studies and Research, Carleton University, Ottawa, 1986.

Cooper, Robert G., *Why New Industrial Products Fail* (Montreal: McGill University, Faculty of Management, 1975).

Darmon, René Y., Michel Laroche, John V. Petrof, *Marketing in Canada* (Toronto: McGraw-Hill Ryerson, 1989).

Day, Peter, Linda Lewis, *Art in Everyday Life: Observations on Contemporary Canadian Design* (Toronto: Summerhill Press/The Power Plant, 1988).

Dow, Sheila C., *Financial Markets and Regional Economic Development* (Aldershot: Gower Publishing Company, 1990).

Drache, Daniel, Duncan Cameron, eds., *The Other MacDonald Report: The Consensus on Canada's Future That the MacDonald Commission Left Out* (Toronto: James Lorimer & Company, 1985).

Field, F.W., *Capital Investment in Canada*, 3rd ed. (Montreal: Monetary Times of Canada, 1914).

Finlayson, Jock A., Ann Weston, *The GATT, Middle Powers and the Uruguay Round*, No. 5 in the series "Middle Powers in the International System" (Ottawa: The North-South Institute, 1990).

Firestone, O.J., *Economic Implications of Patents* (Ottawa: University of Ottawa Press, 1971).

French, Richard D., *How Ottawa Decides: Planning and Industrial Policy-Making 1968-1980* (Toronto: Canadian Institute For Economic Policy, 1980).

Fullerton, D. H., H. A. Hampson, *Canadian Secondary Manufacturing Industry* (Ottawa: 1957).

Gairdner, William D., *The Trouble With Canada* (Toronto: Stoddard, 1990).

Garreau, Joel, *The Nine Nations of North America* (New York: Avon, 1981).

Gauthier, Jacques R., *Colloquium Cultural Subjects*, course manual (Ottawa: Carleton University Press, 1991).

Henderson, Gordon F., *Intellectual Property: Litigation, Legislation, and Education: A Study of the Canadian Intellectual Property and Litigation System* (Ottawa: Supply and Services Canada-Consumer and Corporate Affairs Canada, 1991).

Hopkins, *New Product Winners and Losers* (Ottawa: Conference Board of Canada, 1980).

Kindra, Gurprit S., Michel Laroche, Thomas E. Muller, *Consumer Behaviour in Canada: Concepts in Management Action* (Scarborough: Nelson Canada, 1989).

Laxer, Gordon, *Open For Business: The Roots of Foreign Ownership in Canada* (Toronto: Oxford University Press, 1989).

Lazar, Fred, *The New Protectionism: Non-Tariff Barriers and Their Effects on Canada* (Ottawa: Canadian Institute for Economic Policy, 1981).

Leslie, P., *Federal State, National Economy* (Toronto: University of Toronto Press, 1987).

Levitt, Kari, *Silent Surrender: The Multinational Corporation in Canada* (Toronto: Macmillan of Canada, 1970).

Litvak, I.A., C.J. Maule, *Canadian Entrepreneurship: A Study of Small Newly Established Firms* (Ottawa: Carleton University, Dept. of Economics, 1971).

---, *A Study of Successful Technical Entrepreneurs in Canada* (Ottawa: Carleton University, Dept. of Economics, 1972).

Mackintosh, W.A., *The Economic Background of Dominion-Provincial Relations* (Toronto: McClelland and Stewart, 1964).

Mallen, Bruce E., *Marketing in the Canadian Environment* (Scarborough: Prentice-Hall of Canada, 1973).

McCann, Lawrence D., ed., *Heartland and Hinterland: A Geography of Canada* (Scarborough: Prentice-Hall, 1982).

McCreary, Gerald B., *Canadian Marketing Trends* (Georgetown: Irwin-Dorsey, 1972).

Pacey, Arnold, *The Culture of Technology* (United States: MIT Press, 1983).

Pelto, Pertti J., *The Snowmobile Revolution: Technology and Social Change in the Arctic* (Prospect Heights, Illinois: Waveland Press Inc., 1978).

Pelto, Pertti J., H. Russell Bernard, eds., *Technology and Social Change* (New York: The Macmillan Company, 1972).

Porritt, Edward, *Sixty Years of Protectionism in Canada, 1846-1907* (Toronto: Macmillan, 1908).

Porter, Michael E., *Canada at the Crossroads: The Reality of a New Competitive Environment*, A study Prepared for the Business Council on National Issues and the Government of Canada, October 1991.

Ross, Alexander, *The Risk Takers* (Toronto: Maclean-Hunter Ltd., 1975).

Rostow, W.W., *The Stages of Economic Growth* (Cambridge: Cambridge University Press, 1960).

Ruskenveld, Yvonne Van, *About Canada: Innovation in Canada* (Ottawa: Department of the Secretary of State, Canadian Studies Directorate, 1988).

Rybczynski, Witold, *Home: A Short History of an Idea* (New York: Penguin Books, 1986).

Sitwell, O., N. Seifried, *The Regional Structure of the Canadian Economy* (Toronto: Methuen, 1984).

Thackara, John, ed., *Design After Modernism* (London: Thames and Hudson, 1988).

The Financial Post, *Canadian Markets 1991: Complete Demographics for Canadian Urban Markets* (Toronto: Financial Post, 1991).

Walker, David F., *Canada's Industrial Space Economy* (Toronto: John Wiley and Sons Canada, 1980).

Walsh, John H., *Understanding Technology and Canadian Public Policy* (Ottawa: Ainslie Communications Ltd., 1987).

Watson, John A., *A Study of Some Variables Relating to Technological Innovation in Canada* (Edmonton: University of Alberta, Faculty of Business Administration and Commerce, 1975).

Williams, Glen, *Not for Export: Toward a Political Economy of Canada's Arrested Industrialization* (Toronto: McClelland and Stewart, 1983).

Winham, Gilbert R., *Canada-U.S. Sectoral Trade Study: The Impact of Free Trade* (Halifax: Dalhousie University, Centre for Foreign Policy Studies, 1986).

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