Investigating History Through Exhibition Design: A Case Study On Wim Gilles

by

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Abstract

The project centers on an archive of objects, documents and photographic materials left at Carleton University's School of Industrial Design (SID) by its founder, Willem (Wim) Gilles, PhD. Gilles passed away in 2002, having come to Canada 30 years earlier to establish SID. Reviewing the relatively small body of literature on Canadian design history, few sources mention design educators. The archive provides an opportunity to resolve a gap in design history and to learn more about design. Latour and Sanders offer a means to develop an exhibition of materials openly and collaboratively to respond to the initial research questions, who was Wim Gilles, why did he come to Canada and what was the outcome. Interviews with Gilles' colleagues and former students provided further information, and their participation in surveys about materials from the archives became the first iteration of an exhibition. A second set of surveys gathered feedback from first, second and third year SID undergraduate students, informing the second iteration of an exhibition and future research directions. The project demonstrates that creating an exhibition from an archive is a viable way to address research questions. However, as the research will show, there are many contingencies involved, so it is by no means a formulaic process. In terms of a broader project of developing design history to establish a design culture in Canada, the exhibition is just a starting point.

Keywords: Wim Gilles, Canadian design history, exhibition design, design education, School of Industrial Design

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Preface

Through my background in fine arts, particularly sculpture, I am drawn to objects, and have worked in museums and galleries and studied art history. However, when starting the Master of Design program in the fall of 2016, I had only vague ideas of what constitutes design. My teaching assistantship for that semester helped ground my understanding of design and led to my research project.

Dr. Thomas Garvey, the director of the school at the time, asked me to verify an inventory for an archive of objects, images and documents from the late Wim Gilles, the founding director of the School of Industrial Design. The project had started a few years earlier with the intent of sending the objects to a museum in Gilles' native Holland. I immersed myself in the materials to get an understanding of what was there, and what they meant. I checked 3D scans of objects and in some cases, did them over again. As I became aware of the archive's significance as part of Gilles' legacy and Canadian design history, I realized how little information about Canadian design and design education was available to a broad audience.

I have worked with museums and galleries for two decades, but many exhibitions in such locations are static. Exploring the meaning of the objects in Gilles' archives by seeking input from various publics fit my interests in interactive and socially engaged art. I started by feeling that the materials had importance, and deserved greater attention. Having reviewed numerous sources, spoken with colleagues of Gilles and undergraduate students and travelled between continents, the journey to understanding design through the archive has just begun.

Chapter 1. Introduction

Design, when done well, is invisible. Like the Helvetica font on New York City subway signage, it stands out, at the same time that it blends in. As with many consumer products, why should anyone care about or pay attention to something that is ultimately disposable or ephemeral? In what seems like a paradox, successful design should then negate its own history, its presence, by remaining hidden or erasing itself. However, the following research project will seek to draw attention to Canadian design history to improve its current status and future potential.

Industrial design is a relatively new profession, having only been firmly established in the early twentieth century with the advent of mass production. The Industrial Designers Society of America offers a variety of definitions for design, industrial design and product designers, ranging from the simple to the complex, the functional to the fanciful.[1] For the purposes of this project, design and industrial design will be synonymous, with both being distinguished from art or craft by the opportunity to make something that can be industrially produced, marketed and sold, mutually benefitting the manufacturer and producer. The history of design in Canada is equally varied due to its geographies, climates, populations and cultures. Those differences are multiplied by technologies and design trends that have risen and fallen since the late 1940s when industrial design began to emerge in the country.

[1] A variety of definitions offered from designers and resources shows that design, although distinguished by art through industrial reproduction, can be subjective, determined by context and has no singular definition.

Canada has made contributions to design on an international basis, although there are not enough resources promoting these successes.[2] The size of the country, and hence, its economy does affect such opportunities. However, during a lecture on contemporary Scandinavian design, the question arose of why there is such a concentration of design in small countries such as Denmark, Norway, Sweden, Finland and Iceland. The guest lecturer responded that the governments of these countries promote design, so there is a public awareness of what are considered good or bad practices. There is also attention paid to craftsmanship, and design is taught in the education system, with woodworking classes occurring as early as primary school. Lastly, there is a design culture, in that designers have fame attached to them. [3] Similarly, Petersen describes how Scandinavian governments have invested in design education through university programs and museums while conducting national design studies, all of which tends to support democracy, equality, justice and resourcefulness. Also, a 2011 study sponsored by the Danish government notes design's value in improving quality of life, economic value and the public sector, with a goal of becoming known internationally as a design-centric society by 2020 (p. 7).

As discussed in a recent screening of the documentary film *Design Canada*, Canada has a history of renowned design, but the designers are unknown.[4] Despite efforts to establish design as part of Canadian society since the late 1940s,[5] federal government support waned in the early

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[2] Rashid (2004) reviews the success and lack of representation of Canadian design and creativity since it emerged internationally with Expo 67 (p. iv-v).
[3] (2013, November 21). Lecture on Scandinavian Design. IDES 1000, The History and Theory of Industrial Design, Carleton University, Ottawa, ON.
[4] Durrell, G. (June 18, 2018). Discussion of *Design Canada* screening. National Gallery of Canada, Ottawa, ON.
[5] Collins (1987) discusses the efforts to establish design in Canada in the Post-Second World War era with the involvement of government, the private sector and the public.

1980s (Overhill, 1991, p. 10). By looking at Wim Gilles and the establishment of the School of Industrial Design (SID) at Carleton University, the research project considers how design and design history may be better understood, and hence, utilized, in the context of a country that has neglected these resources. Rather than recount chronological events, the research project generates and disseminates design history through public engagement in the form of an exhibition.

1.1 Purpose and Rationale of Study

The purpose of this study started with a desire to understand Wim Gilles' role in Canadian design and design history, and thus contribute to establishing a historically aware design culture in the country. As the research about Gilles evolved, the process turned to design methods to find novel ways in which to explore and present history through an exhibition. Although a renowned designer in his native Holland, Gilles spent the last 30 years of his life contributing to the development of SID at Carleton University. However, in reviewing the literature on Canadian design history, there are few mentions of design educators, and no texts devoted to the history of design education in the country.

The study has immediate importance to design historians and educators by filling a research gap in Canadian design history and encouraging the development of knowledge about design education in the country. By gaining a greater awareness of design history, designers can see what has occurred in the past to arrive at the present, and to be able to speculate more fully about what the future may hold. Design students have a vested interest in the study to inform the development of their training and eventual careers in the design field. Lastly, design has become

so ubiquitous and integral to living in highly technological societies that exist because of what has been built or constructed. A public that is better informed about design can thus help it develop in positive ways, fostering the design culture described in Scandinavia, identifying what constitutes competent or good design, and demanding these practices so that everyday lives are enhanced by design rather than damaged by its misapplication.

The positive contributions of the project relate to design thinking, particularly collective creativity and research through design, and may be informed by these methodology. Designing an exhibition from an archive to develop and share knowledge is not new by any means. But, involving people with a vested interest in resolving questions in a democratic manner seems incredibly relevant when information has become increasingly suspect.[6]

1.2 Research Questions

The study begins by focusing on three formative research questions. These led to describing and evaluating the exhibition design exercise as informed by Latour and Sanders to contribute to design history and foster design culture. The first question asks who Wim Gilles was, including his life and career before and after arriving in Canada. Closely tied to that question is understanding his approach to design as it was informed by his personality, education and available opportunities.

[6] Fowler, G. (2018). I fell for Facebook fake news. Here's why millions of you did, too. *The Washington Post*, Oct. 23, 2018. Retrieved from https://www.washingtonpost.com/technology/2018/10/18/i-fell-facebook-fake-news-heres-why-millions-you-did-too/

The second research question asks why Gilles came to Carleton. He had international connections before immigrating to Canada, and his contribution to SID began as a part-time consultant and then developed into a full-time position (Appendix A). What remains unclear is why Gilles was initially chosen from any other available candidates to consult on establishing a design program. Gilles was known as a designer, educator and a director of the Design Academy Eindhoven before coming to Canada. His age and the trajectory of his career may have also been a factor. Perhaps something specific about his approach to design may have been a factor, whether it was considered European, and not necessarily Scandinavian or American. Gilles' appointment as a consultant could have resulted from a chance meeting between him and the hiring committee and the late Doug Shadbolt, the director for the School of Architecture at Carleton University that proposed SID, or through an intermediary (Appendix B). Certainly, many of the early SID professors began their careers through such chance encounters.[7] Gilles' transition from part-time consultant to director is less mysterious, as having developed the program, he would presumably be the best candidate to oversee it. Limits to research in this area result from the passing of nearly forty years since the establishment of SID, and the loss of memories, organizations, information and people involved with its founding.

The third research question focuses on the outcome of Gilles coming to Canada. The obvious response is establishing SID. However, the question goes beyond that to consider what is unique to Carleton, especially because of Gilles' role in establishing the school. It is also

[7] B. Burns was hired by Gilles after visiting the school (personal communication, April 18, 2018), J. Giard was offered a position with SID after giving a guest lecture (personal communication, April 6, 2018), M. De Leeuw was already familiar with Gilles and SID when offered a position with the school (personal communication, June 13, 2018) and G. Singer was offered a position with SID after becoming acquainted with Gilles (personal communication, June 22, 2018).

important to look at Gilles' contribution to design education in Canada, especially given the lack of attention paid to that area.[8] The outcome is also not merely looking at statistics to see how many students have graduated from the program, then comparing those quantitative data with other schools. Evaluating specific attributes of design education is beyond the scope of the study. Rather, the answer involves looking at the first two questions, taking into consideration interviews done with friends, colleagues and former students of Gilles (Appendix F). As with the previous question, limits to research occur due to the availability of interview candidates and participants in the exhibition design exercise, loss of memories, information and people who have passed away. By using design thinking methods in conjunction with Latour's ideas about matters of concern rather than matters of fact, the project allowed people to contribute knowledge and inform the development of an exhibition through interviews and surveys, which communicated their knowledge about Gilles and Canadian design history in a unique way.

1.3 Exhibition Design Approach

Developing an exhibition by engaging various publics to share knowledge through the archive and generate new knowledge provides an opportunity to address the research questions. The researcher adapted Latour's method of reconnecting objects with meaning, or "matters-of-concern" rather than "matters-of-fact", to reinvigorate political action and open discussion (Latour, 2005, p. 9). Also, participatory design as a subset of collective creativity has already become widely used in design (Sanders and Stappers, 2014, p. 5), but not necessarily exhibition design.

[8] McLean Knapp (2015) makes a case for the importance of design studies as a part of design education (p. 57-71).

Getting responses to the research questions based on the archives had limitations, including having a space to view the objects and enlisting people to give feedback. While the iterative process of gathering feedback about materials from the archives and developing an exhibition based on that feedback could continue for more than two iterations, the scope is limited by the constraints of the thesis timeline. Another limit to developing an exhibition based on the archive may be seen as its inherent incompleteness. However, an assumption of total knowledge has not been made, nor is it the goal of the study. The iterative exhibition design process will always be incomplete, which is what allows it to continue. The main guidelines for using materials from the archive was to avoid leading the survey participants in a direction, manipulating the materials to achieve a desired result and simply creating an arbitrary display of materials.

1.4 Thesis Outline

The subsequent chapters offer information and relate to the study in the following ways. Chapter two consists of a literature review to identify themes from Canadian design history. Gilles is looked at in terms of his design and research interests. In that context, the researcher considered his design and research interests, including product presence, writing on design education, development of form organization, Delta knowledge and relevant philosophical methods.

Chapter three discusses the methodology used for the study. In using interviews as part of the project, narrative research processes are identified, particularly ethical concerns. Relevant methods that involve people in design include design ethnography, directed storytelling, and evaluative research. The exhibition design portion of the study relates to theoretical approaches

including Latour's interest in creating a display of materials as a collective action to democratically arrive at their meaning. Sanders and Stappers' discussion of participatory design provides the means to develop the exhibition according to Latour's principles. Research through design is also presented as a design activity that helps build knowledge, creating an understanding of a problem by iterating prototypes about it, or in this case, exhibitions that inform subsequent displays.[9]

Chapter four looks at the results and implications of the interviews and surveys in terms of the research questions. The interview question responses are summarized, as well as the interview process and the outcomes. The survey questions and format are considered in terms of the different iterations and the resulting exhibition design exercises. Chapter four also provides a discussion of how effectively the research responded to the questions and implications and meanings of the results.

Chapter five presents the conclusion of the research, offering new information about the research questions. Limitations and further opportunities for study are also discussed. Lastly, contributions to design are outlined, including recommendations resulting from the research.

[9] Hallgrimsson (2012) describes how physical prototypes bring people together in discussion that provide a unique level of interaction (p. 6), providing aspects of what he refers to as a "tangible discussion" (personal communication, November 15, 2018).

Chapter 2. Literature Review

In the 2005 exhibition *Making Things Public*, curators Latour and Weibel brought together over one hundred artists, philosophers, sociologists, historians and scientists. Through the various displays, they question the purpose of politics at a time of extreme doubt and disbelief in political systems to investigate their meaning. While upholding the notion of democratic representation, the central question to the exhibition was how things are made public in order to broaden what it means to act politically.[10] Through the term *Dingpolitik,*[11] Latour (2005) defends the importance of exhibitions for exploring possibilities through *Gedankenaustellung* or "thought-experiments", and describes how *Making Things Public* is not a single gathering but an "assembly of assemblies", providing opportunities for viewers to consider different means of representation (p. 21).

Gordon (2009) analyzes the curious establishment of Black Creek Pioneer Village north of Toronto in 1960 to show how the arrangement of a fictitious town site in the present can give shape to inaccurate historical narratives, while reinforcing contemporary experience, including a sense for the past (p. 479-493). Functioning as a living history museum, the site was not set up as a reaction against modern life, providing a shelter through an idealized past, but rather as a link to the past to make sense of the present and the future. Historic buildings, objects and lifestyles were presented in ways that did not exist historically, but rather mirrored aspects of the present,

[10] ZKM | Center for Art and Media (2005). Making Things Public: Atmospheres of Democracy. Retrieved from https://zkm.de/en/exhibition/2005/03/making-things-public.
[11] Substituting the term *Dingpolitik* for *Realpolitik* provides an expanded term for a realist and representative view of power relations, where politics incorporate people and the issues attached to them, objects become known by the many concerns attached to them rather than just facts, and assemblies take on new forms for a public that has been absent from politics (Latour, 2005, p. 4).

including suburban development, consumerism and gender roles. These instances help to demonstrate how interacting with materials from the archive is not a neutral activity, and history is determined by present concerns and experience. Latour's methodology has been adapted in hopes of expanding the meaning of the objects in the archive and their relationship to people, rather than assigning arbitrary or false information to them, and transmitting that information through an exhibition.

By creating an exhibition about Gilles from his archives, the intent is to explore the significance of the materials through their selection via collective and democratic actions or iterations. Various knowledge sources and methodologies contribute to the process and respond to the research questions of who was Wim Gilles, why did he come to Carleton and what was the outcome. Secondary sources help frame the research questions, determining not only the context for the materials, but for Gilles as well. Reviewing materials related to the themes of Canadian design history, Gilles' design and research interests, and relevant philosophical methods, the research project may intervene in the historiography of Canadian design.

2.1 Limitations of Canadian Design History

Design histories typically plot chronologies from starting points in the twentieth century stemming from new social and technological developments that spread rapidly across society. These forces affect design history in a way that cannot be disentangled. In some cases, efforts of individual designers are showcased. For instance, the emergence of industrial design in the early twentieth century is associated with the proliferation of mass production and new forms of education, such as the Bauhaus, which was established by Walter Gropius (Bürdek, 2005, p. 28).

If anything, these factors play off each other, or in concert, helping to spread or inhibit innovation. In referencing Latour, the goal of the project is to draw attention to these complexities rather than simplify or reduce them.

Although these histories are not mutually exclusive, it is difficult, if not impossible to consider all chronological accounts at once, or to say which one has the most dramatic effect. Hence, the following sections look at sub-themes in the historiography of Canadian design history to review how it has been written. Texts were mainly chosen given their focus on industrial design within Canada between 1940 to 1980, establishing the period before and shortly after Gilles' arrival. Although the research questions focus mainly on who Gilles was, why he came to Canada and the results, it is also necessary to look at design history from Canadian, Dutch and American perspectives, as he was active in all three contexts.

Many of the texts used for the literature review look at social forces driven by economics, culture and politics that are illustrated by events in Canada such as the Post-War Era, the rise of modernism or conservative or liberal governments. However, Latour (1992) has argued that these types of events are really the result of people interacting with things.[12] While some of the texts do note important historical links, such as the relationship between products or materials and certain consumer markets, others focus more on broad social forces and neglect these connections. Although the literature review attempts to identify themes from the various sources, which may also limit the amount of details behind seemingly vague or mysterious forces, the

[12] Latour (1992) looks at how constraints from various objects influence human behaviour, which is appropriate to basing the study of Gilles on his archive of objects (p. 152-180).

goal of the research project is to highlight the relationship between people and things, presenting an alternative to the way history is typically written or understood.

2.1.1 Economics, Culture and Politics

Cultural and political factors such as modernism and the emergence of Canada as a distinct nation are often seen as influencing the country's design histories. However, these events can be broad and vague at times. Design histories that look to economic pressures present a somewhat different view, focusing on more specific actors or events that undeniably influenced the way products or services might be designed and taken up by society. In particular, it is useful to look at how consumers played a significant role in Canadian design history through their choices.

Wright (1996) describes how modern furniture was touted alongside new social movements in early twentieth-century Canada (p. xv). Functionalism and even a new emphasis on health and hygiene helped get rid of decorative models from past Canadian design, while young mothers and housewives confronted their domestic circumstances, and new wealth developed following the Great Depression. However, modern furniture design did not prosper in the country during the interwar period due to the conservative nature of manufacturers, and the banks that would not fund them.

Parr (1999) argues that Canada had a less active consumer culture than that of other nations during the Post-War period, which in turn, affected design. The population and available wealth influenced the form, quality and range of goods. The Pre-War generation, still with the Great Depression in mind, and the Post-War generation, for whom security was more important

than prosperity, made limited purchases. As a result, Canadian consumers and producers existed between the European emphasis on function, workmanship, materials, and the American model of mass production based on price, novelty and style.

Keynesian economics tended to restrain Canadian industry and spending by emphasizing stability. Also, industry was not able to keep up with demand for goods, such as household appliances and shortages of materials, and a looming foreign exchange crisis further hampered the country. Geometric and universally applicable modernism was necessary to industry given its emphasis on mass production, relation to politics and potential for free trade through international markets. By extension, industrial design presented a solution to economic problems. However, a lack of technological understanding delayed modernism's deployment in Canada. The emphasis on an international style was reined in during the 1950s to focus on national concerns. Furniture makers were faced with the challenge of adapting heavy maple furnishings to modernist designs, while pleasing consumers who sought good value for their investment. As a result, modern furnishings came to be seen in certain instances as those that would last. As housewives and homemakers, women were instrumental in making purchasing decisions for establishing a stable household within a limited budget. Hence, a rift existed between the woman as consumer and the marketer of industrial design who sought to commodify the domestic setting.

As Gotlieb and Golden (2004) point out, economics also determined the rise and fall of designers, but through external pressures. During the 1960s, Montréal's Punch Designs and Huber Manufacturing produced Scandinavian style furniture at a lower cost to stave off imports,

while others turned to making furniture from steel tubing to compete (Gotlieb & Golden, 2004, p. 68). The North American Free Trade Agreement stripped away protections offered by tariffs between the late 1980s and early 1990s, leaving companies to redefine their strategies once again. However, even from the early twentieth century, American branch plants manufactured goods such as radios, televisions and automobiles in Canada, while design and development happened elsewhere. Gotlieb and Golden (2004) outline the degree of American economic influence over Canada in an instance when the US government dismantled foreign ownership of Northern Electric by AT&T and Western Electric in the 1950s. These actions led to the development of a plant in Ottawa in the 1960s and the opening of the Bell Northern Research department in the 1970s, later becoming Northern Telecom, then Nortel.[13]

Despite the influence of often negative economic forces, Gotlieb and Golden (2004) argue that Canadian design emerged after the Second World War due to the ability to compete globally (p. vii). Designers embraced modernism as a stylistic guide for new products, although it was met with criticism and indifference, and new materials, such as plastic, aluminum, and moulded plywood, drew mixed reactions. However, the design industry itself was split into various segments, with small-scale "studio manufacturers" serving niche markets along with those working in arts and crafts as borderline hobbyists (Gotlieb & Golden, 2004, p. 32-34). Pop culture also arrived in Canada during the late 1960s, but as with modernism, was promulgated chiefly by architects, and paved the way for pluralism and the rejection of "good design" toward the end of the twentieth century (Gotlieb & Golden, 2004, p. 37, 40). Looking beyond the 1980s,

[13] Gilles would have seen the effects of branch plants along the Saint Lawrence seaway, including Black & Decker in Brockville, Proctor & Gamble in Belleville and Nortel in Ottawa (B. Hallgrimsson, personal communication, November 22, 2018).

the authors present a trajectory of cultural forces including postmodernism, deconstruction and a gradual return to modernism.

Cultural and political events can also be seen as influencing Canadian design history, but in more general ways, particularly due to the large scale of the related events. Authors for the exhibition catalogue *Made in Canada: Craft and Design in the Sixties* show how Canada struggled with nationalist projects to establish its own identity. The decade is seen as a heyday for Canadian design that included international airports, the space race, the new Canadian flag and aspects of Expo 67, as well as the introduction of synthetic materials, the influence of Scandinavian design and the role of counterculture. The authors' analyse vast cultural, political and technological projects that aimed to unify Canada and establish it internationally, showing how modernism did not succeed as some had hoped and became worn out by the end of the decade. Hodges looks further behind cultural and political events by arguing that Canada's emergence on the world design stage in the 1950s and 1960s occurred through the appropriation, imitation and dispute over what was deemed Scandinavian design (2015, p. 57). The country was determined to build its own international design identity by latching on to what had been established elsewhere and was received well domestically. Hodges (2015) deconstructs the notion of Canadian design as well as how design from Scandinavia was perceived. Canadian design followed the model of "good design", as seen in Britain during the Post-War era, and uncomplicated, functional forms seen in Scandinavian design were incorporated into Canadian

products. However, these idealized forms contrasted with patterns of consumption in Canada, and social values thought inherent to Scandinavian design were misleading.[14]

Despite borrowing design ideas from elsewhere and war-time shortages, there were efforts to develop furniture design in Canada for social welfare, and Collins (1986) describes in detail how the federal government played a key role in fostering Canadian design following the Second World War. Donald Buchanan used his role as editor for *Canadian Art* magazine and ties to the National Gallery of Canada to promote aspects of design that he deemed worthy. The *Design In Industry* exhibition was held at the National Gallery of Canada in 1946, with an accompanying catalogue published in 1947. Drawing on consumer products produced in the first nine months of 1946, Buchanan offered the text to spur the role of design in Canada as he saw demonstrated in Sweden, Finland, Great Britain and the United States. In closing, he makes three recommendations including the establishment of a central clearing house allowing for the exchange of information related to design, industrial design research funded by both government and industry, and the release of more information about Canadian design standards for various products and how to locate Canadian design talent. Buchanan's view of design emphasizes how it is shaped by culture, technology, politics and economics. What followed were design competitions and design centres situated across the country to generate consumer interest in design, giving fledgling designers an audience as well as a market. As educational institutions such as the Ontario College of Art began to train students in interior design as early as 1930, debates raged as to how craft and design should engage one another, if at all (Wright, 1996, p.

[14] Nationalism can be seen as a contributing factor in promoting Canadian design, especially in seeking to establish a national identity, yet Hodges (2015) shows how these efforts often undermine themselves (p. 57-51).

91). During the Post-War era, the guidelines set out by Buchanan, one of the most influential public figures involved with design, were confined to a very narrow idea of modernism and design that excluded any relationship with craft (Wright, 1996, p. 120).

Political forces that worked against Canadian designers included a federal government that was reluctant to participate in international expositions during the 1920s, leaving domestic furniture design to maintain its heavy, colonial stylings (Wright, 1996, p. 10). Following World War II, Buchanan called for the development of Canadian design, yet promoted architects as industrial designers (Wright, 1996, p. 101). Establishing a national design index and a government-run Industrial Design Information Division toward the end of the 1940s helped to conceptualize the notion of Canadian design. However, a lack of public and private funding for research and development did not improve the situation.

2.1.2 Design Technologies

Technology may not necessarily provide a way for looking at Canadian design history that is closer to Latour's notions of people interacting with things. However, it does offer concrete instances of how specific industrial processes contributed to historical developments. New manufacturing methods supported the emergence of modern Canadian furniture in the early twentieth century (Wright, 1996, p. xv). Yet, the period following the Second World War brought challenges. Technologically speaking, the differences amongst producers throughout the country were stark, with meager resources on the east and west coast, a mixture of craft production and factories in Québec and an emphasis on mass production in Ontario (Wright, 1996, p. 107). It is during this period that Canada gained international recognition for design,

capitalizing on new materials coupled with the country's capacity for manufacturing (Gotlieb & Golden, 2004). Wright (1993) argues for the importance of the 1950s to Canadian design, while discussing the challenges specific to Québec designers, such as the climate and conservative social attitudes. The west coast responded to modernism in specific ways, with the geography, climate and abundance of lumber shaping the output of artists, designers, architects and manufacturers, who all shared close relationships (Elder & Thom, 2004). Vancouver was exposed to many international influences, and people from other parts of Canada had picked up on some of the local designs, such as chairs by Mouldcraft. Collier (1993) argues for the popularity of modernism throughout the various design activities happening in western Canada, yet despite trend houses built across the country by the government to showcase design, new products were not selling well due to cheap imports. Modernism's development in Canada was ultimately held back by technology given that Canadian designers did not understand how to develop their ideas using cutting edge materials and methods of mass production, while manufacturers lacked the necessary equipment for the task (Parr, 1999). In the case of Vancouver, it did not strive to become an international centre that could export what it was producing, and designers moved away from the region by the end of the 1950s due to a lack of support (Thom, 2004, p. 18).

2.1.3 Individual Figures and Canadian Design History

Focusing on the careers of individual designers and products, particularly well-known or famous ones, is a common approach to design history, and borrows some of its methodology from art history. For instance, Racine focuses on Julien Hébert and Gotlieb and Golden concentrate on mainly domestic objects that can be seen as popular. Reviewing Gilles' accomplishments is not

meant to emphasize the importance of a single individual, simplifying what Latour and the research project seek to reveal as complex relations between people and things. Rather, the brief profile by Overhill is a rare instance and underscores the lack of attention given to Canadian design history. The research project on Gilles reflects Highmore's (2009) wish for a history of design without designers and the fixation on a few already famous figures and institutions such as Charles and Ray Eames, Le Corbusier and the Bauhaus (p. 3). In a text accompanying the 1964 exhibition *Architecture Without Architects* at the Museum of Modern Art, Rudofsky (1964) writes of introducing non-pedigreed architecture to expand on architectural history typically based on only a few certain cultures (p. 1). With Highmore and Rudofsky in mind, the focus on Gilles addresses questions about his identity and career, and while not glorifying him as an individual, the study also provides an opportunity to examine Canadian design history at a specific time and place.

The researcher found few Canadian sources dedicated to Gilles. Overhill (1991) describes how Gilles' career in Holland became established around the same time as a study tour to America in 1953 (p. 10). His move to Canada nearly 20 years later came from the invitation to consult on the establishment of SID at Carleton, supported in part by the federal government. At the time, Gilles noted how industrial design was not taken seriously as a profession (Steed, 2001, D3). Although the school successfully functioned under his directorship, government funding for design declined in the 1980s (Overhill, 1991, p.10). He also wrote on design education and epistemology and stressed the necessity for teamwork in contemporary design work (Overhill, 1991, p. 10). Six years after his retirement from teaching, Gilles was awarded an honorary doctorate from Carleton University in 1997, five years before his passing in 2002.

While Gilles certainly contributed to Canadian design, it is also worth considering his connections to other people to show that he is not a lone individual operating in isolation. For instance, Gilles' career developed due to his interaction with many people and opportunities he participated in prior to his arrival in Canada. He can also be seen affecting other people through his connections to SID. For instance, Karim Rashid was a student at Carleton University in the early 1980s who recently opened an exhibition at the Ottawa Art Gallery (Figure 1).[15] The same could be said of Michel Dallaire, a student of renowned designer Julien Hébert and featured in a retrospective exhibition at Musée de la civilisation à Québec (Figure 2). These connections amongst people and the objects between them reflect Latour's approach to expanding meaning, and for the purposes of the research project, to broaden the sense of Canadian design history, albeit one that is male dominated.[16]

[15] Gilles helped Rashid attain an internship in Italy. (B. Burns, personal communication, January 24, 2018).
[16] Esther Shipman's 2011 exhibition *5%: Against the Odds, Canadian Women in Industrial Design* highlights a profession where recent statistics show only 5% of Canadian industrial designers are women.

Figure 1. *Karim Rashid: Cultural Shaping*, Ottawa Art Gallery.

Figure 2. *Michel Dallaire, de l'idée à l'objet,* Musée de la civilisation de Québec.

2.1.4 International Connections

To get a better understanding of Gilles and the context affecting his personal and career trajectory, the next section covers international connections through his involvement in various contexts. Following the Second World War, Gilles worked in Holland at sugar factory Puttershoek in numerous roles, including assistant engineer, executive secretary and furnishing advisor. From 1947-1949, he worked at Samson, a publisher, then joined Diepenbrock & Reigers in Ulft (DRU) until 1953. After that time, he established his own office, working with Frans van der Put of Philips.

Simon Thomas (2008) addresses cultural, economic and political aspects of Dutch design from the late nineteenth century up to the present day.[17] Gilles features prominently within the Post-War era during the start of his career. "Goed Wonen", or good living, as well as "Goede Vorm", or good design, were key movements in design, along with the establishment of the Instituut voor Industriële Vormgeving (IIV). Cited as the first industrial designer in The Netherlands (te Duits, 2003, p. 10), Gilles helped found the Kring Industrieel Ontwerpers (KIO), or Association of Dutch Industrial Designers, in 1952 and contributed to professionalizing the practice through his analytical, systematic approach. His role in education is noted through involvement with Design Academy Eindhoven (DAE), first as a teacher and later as its director (Simon Thomas, 2008, p. 147). According to Saam (2008), the school's early curriculum under its first director René Smeets reflected Gilles' interest in design education that included practical

[17] Simon Thomas (2008) identifies five themes around Dutch design culture throughout the historical period including the importance of the artisanal designer in the early twentieth century, the advent of modernism before and after the Second World War, morality in design, the professionalization of Dutch design through the Instituut voor Industriële Vormgeving (IIV) and public exhibitions in the 1950s and 1960s, and lastly, critical views of modernism, commercialization of design, and the lack of sustainable practice.

and technical aspects and mass production (Saam, 2008, p. 26). When Gilles assumed the directorship of DAE in 1970, his attempts to introduce a structure closer to a university were opposed by the board of governors and he left the position in 1973 (Saam, 2008, p. 33), coming to Canada.

Similar to Latour's interest in exposing the relationships that exist between objects and people, Te Duits (2003) argues that narratives behind the artefacts related to industrial design, whether they are sketches, drawings, prototypes, models or the finished object, have gained greater attention in recent years.[18] The catalogue features the redevelopment of a tea kettle for DRU and the Scooterette as examples of Dutch design (Figure 3-4). While the first became a celebrated household utensil and an example of Gilles' method of form organization, the latter remained a prototype due to changing legislation and production costs. Relying on form organization, a mathematical method for design that Gilles would develop over the next 50 years, the designer helped usher in a systematic approach to form and design that was previously left to more arbitrary techniques (te Duits, 2003, p. 12).

[18] For the exhibition catalogue, *The Origin of Things*, Te Duitts (2003) references Georges Perec's *La Vie, Mode d'Emploie - Life, a User's Manual* as a source of inspiration for the catalogue. The novel details the lives of the tenants in a Paris apartment block and their connections to each other, remaking or reconstructing these relationships through the story. As noted by te Duits (2003), the catalogue is "an anthology of reconstructions" (p. 6).

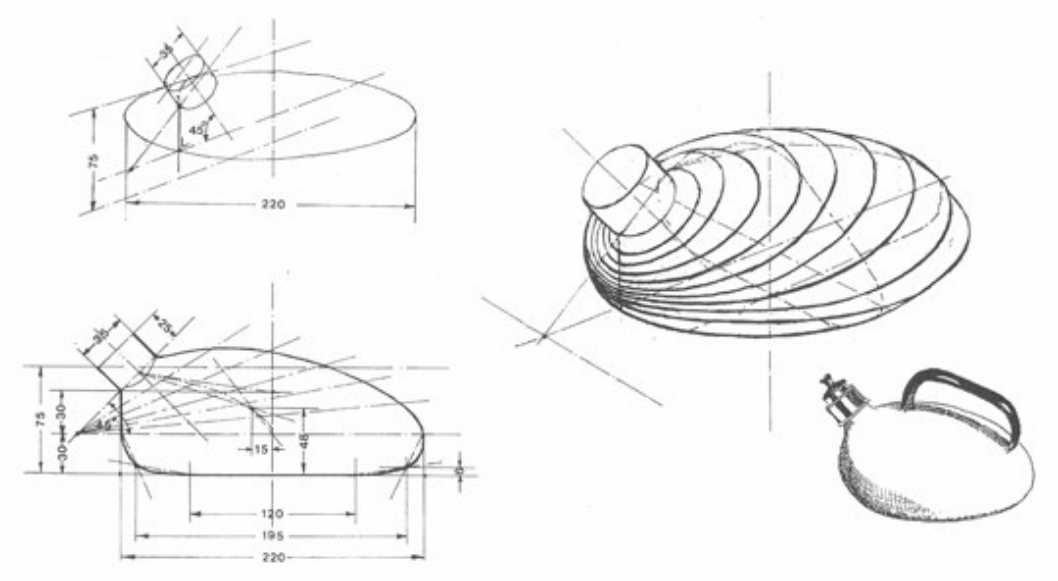


Figure 3. DRU Kettle, 1954.

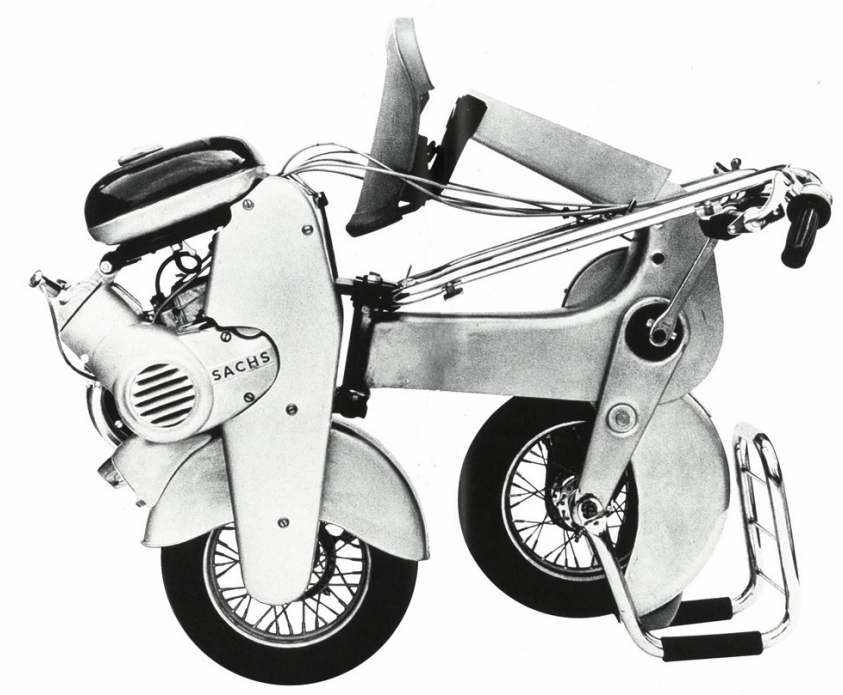


Figure 4. Scooterette, 1958-1964.

Pulos (1988) describes the eagerness for European designers to learn from the United States following the Second World War (p. 233). Gilles was one of six members of a Dutch contingent in 1953 who visited major American designers, companies and educational institutions including Henry Dreyfuss, Raymond Loewy, General Electric, Westinghouse, Kodak and the Massachusetts and Illinois Institutes of Technology (Figure 5) (Appendix C). Of particular interest in the photo of the study tour are the titles given to Sanders, director of a school dedicated to industrial design, and Clement, head of industrial design for Kodak. Such distinct positions are important in terms of the development of industrial design as its own field, and although they are more difficult to identify, the products displayed in the photo on the desk speak directly to that specific activity. Gilles' impression of American industrial design was its commercial and methodical approach that was of great importance to industry and making

profits (Pulos, 1988, p. 233). He applied many of these ideas upon his return to Holland,[19] [20] and established international connections that would last throughout his career, and beyond (Appendix D).

Figure 5. United States Study Tour, 1953, (from left) René Smeets, Karel H. Sanders (Director of the Institute of Industrial Design, Amsterdam), Theodore G. Clement (Kodak, head of industrial design), Karel Suyling, Wim Gilles, Jaap Penraat, Robertson, Reinder Blijstra (Editor of the art and design section of "HET VRIJE VOLK" newspaper), unnamed Kodak employee.

[19] Gilles explains the need for a mediator between sales and designers, and in charge of the product planning department, something he learned when touring General Electric (te Duitts, 2008, p. 18).
[20] Gilles describes how differences between sales and manufacturing had been resolved in the United States by making what would sell, rather than the practice in the Netherlands of hiring salespeople to sell what the factory made, something Gilles described as "primordial marketing" (Overhill, 1991, p. 10).

To further reflect on the context outlined in the literature review, the following table offers a summary of significant events taken from Gilles' life and design history in Canada.

Table 1. Timeline of Significant Events 1920 - 2005

	Wim Gilles		Canada	
1920	Born, Alkmaar			
1925				
1930				
1935				
1940	Studied Engineering at Dordrecht Poly-technic			
1945	Worked at Puttershoek, Samson, DRU			
1950	DRU steam kettle	Dutch Study Tour to United States	Founding of Association of Industrial Designers of Canada (ACID)	
1955	Established own design practice		Founding of International Council of Socities of Industrial Design (ICSID)	Founding of first provincial chapter ACID-O
1960	Scooterette		Creation of the National Design Council	
1965	Instructor, Design Acadmey Eindhoven			

1970	Director, Design Academy Eindhoven.	Consultant to SID programme - Carleton University	Director of SID programme - Carleton University	Creation of Quebec chapter ADIC-Q	First ICSID Congress to be held in Canada - Montreal	First university level I.D. programme - Universite de Montreal
1975	Presents "Student Design Projects: How Good Are They?"at ICSID, Mexico City			First post-graduate I.D. programme - University of Calgary		
1980	Establishes Centre for Industrial Design Research, Carleton University			Incorporation of ADIQ		
1985				Dismantling of National Design Council and Design Canada	Incorporation of BCID	Incorporation of ACIDO with status of corporation with reserved title
1990	Retires from Carleton University	*Form Organization* published		First congress of the National Congress of Industrial Designers - Montreal		
1995	Receives Honorary Doctorate	*The Context of Industrial Design* published		Second ICSID Congress to be held in Canada - Toronto		
2000	Passed away, Ottawa			Third ICSID Congress to be held in Canada - Quebec		

2.2 Design and Research Interests

The previous sections provide a summary of some of the themes found in secondary sources for Canadian design history during the mid to late twentieth century, and how they may be limited in certain ways. The following articles relate to Gilles' design and research interests. As either an author or co-author, he outlined his appreciation for systematic and analytical thinking. He also describes aspects of education and knowledge specific to industrial design.

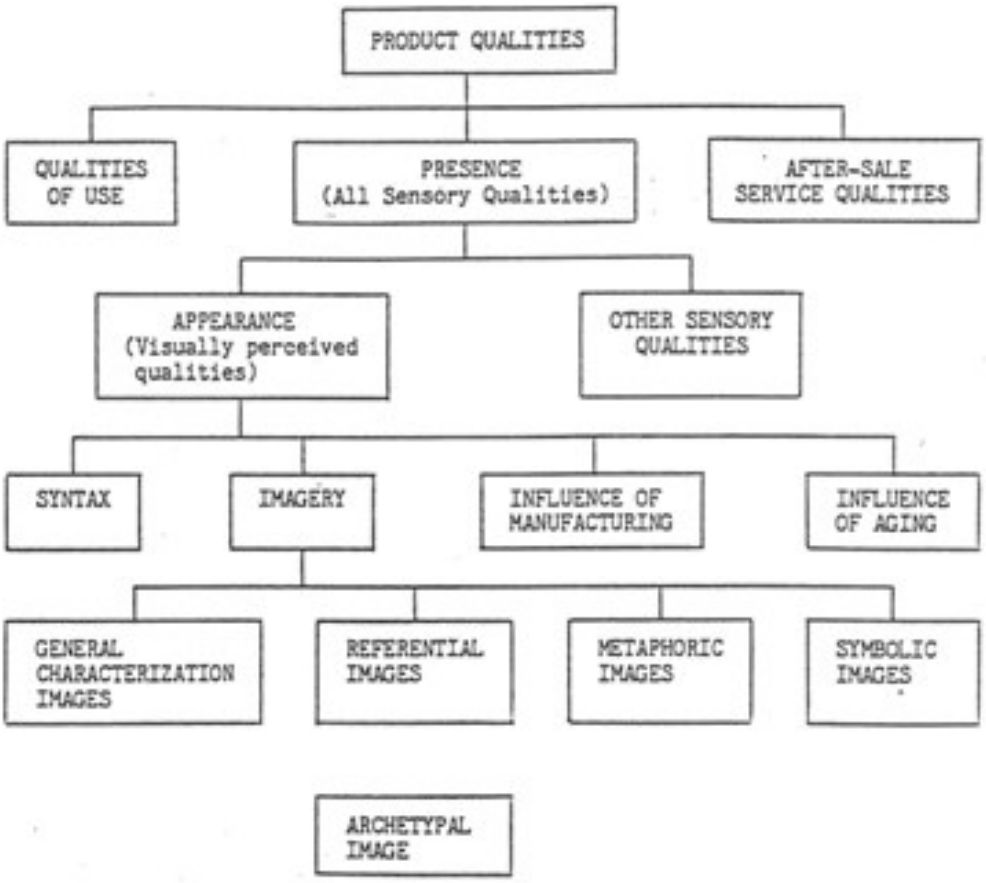
Gilles' design and research interests review his approach to design, including related articles and books that he published. The publications act as a bridge between his interest in design and the section on relevant philosophical methods from other authors, which help explain some of the theories that may have motivated Gilles.

2.2.1 The Product's Presence

The notion of aesthetics in art history and design share some common ideas, typically seen when discussing movements like De Stijl, modernism or postmodernism. However, due to design's application of aesthetics through practice, these ideas can be seen in a slightly different context. Crouwel describes Gilles as an "engineer-designer", who disliked being seen as a mere stylist to "make things look pretty", and he often avoided the topic of aesthetics (te Duitts, p. 11, 2003),

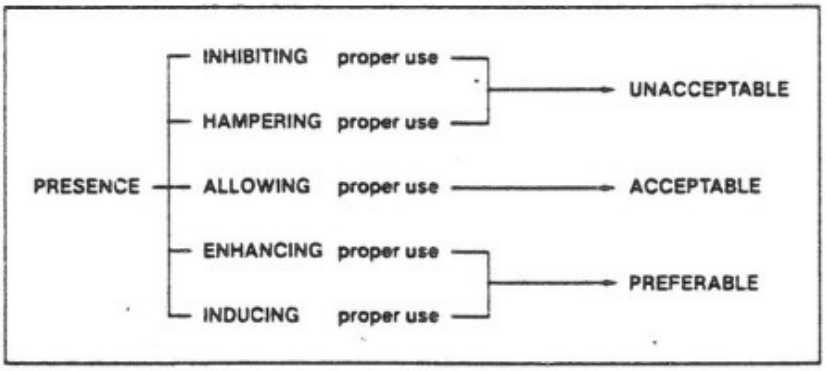
> The first American industrial designers were the stylists, just think of Loewy who came out of the fashion world, or Henry Dreyfuss. Somebody who was really a great example for Gilles was, of course, Buckminster Fuller. He brought engineering and aesthetics together. (te Duitts, 2003, p. 16)

In his own way, Gilles (1985) argues for a consistent approach to the aesthetics of an object, describing a gap between the way designers and the public view an object, attempting to outline what is perceived or appreciated (p. 5-8). He goes on to establish how form does not always follow function, and that things that work well do not necessarily look appealing. However, the relation between a product's use and presence, its sensory qualities, should not be underestimated, whether it enhances its use, takes away from it, or contradicts that relationship completely. In terms of aesthetics, products often have various qualities, distinguishable in terms of manufacturing processes, the aging of the product, imagery and the syntax of its formal elements (Figure 6-7). The diagrams reflect Gilles' interest in an object's sensory qualities and how their relation to its use determines its worth, rather than mere styling. However, aesthetic judgements are often applied across these qualities, and designers neglect to consider undeniable product attributes, particularly how it will age. According to Gilles, the image of a product is determined by a person's arbitrary interpretation of its presence, but actually involves a general characterization, referential image, metaphoric image and symbolic image. Gilles concludes by describing how a public educated about design is better equipped to appreciate subtle or complex qualities of a product's presence, and how designers can help reconcile that understanding with their own.

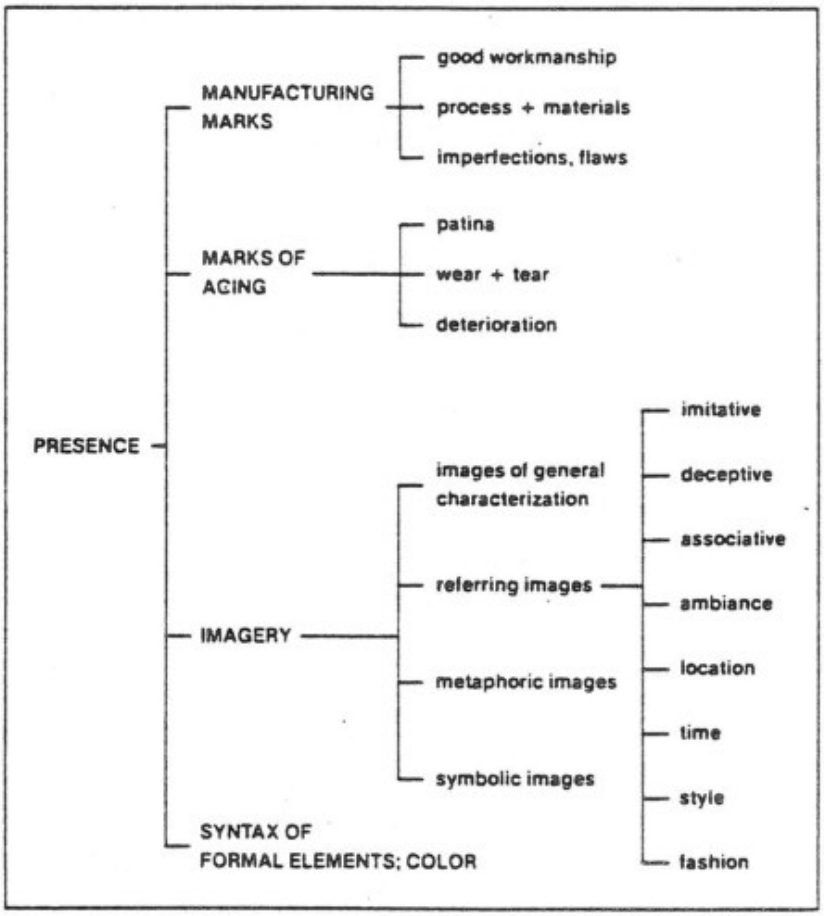


The Presence of Products

(Gilles, W., The Presence of Products, Innovation, Vol.4,nr.3, 1985)



The judgement of the relation between the use of an object and its presence



The interrelation of the various aspects of presence

Figure 6-7. Diagrams for products, not so much to guarantee their performance, but to reveal how they can work under different circumstances. Note. Gilles, W. (1985). The presence of products: A question of perspective. *Innovation, 4*(3), 5-8.

2.2.2 Design Education

For the 1979 International Council of Societies of Industrial Design in Mexico City, Gilles presented a paper entitled "Student Design Projects: How Good Are They?" In it, he outlines the profile for a successful student, including skills and experience. These attributes can be taught through the student design project, which has a number of variables, and provides valuable practical experience (Gilles, 1992, p. 3). As with design, Gilles was equally analytical of design education, and outlined some of its more specific qualities in the following publications.

Gilles and Giard (1993) wrote about the importance of continuing education for designers (p. 1-3). They consider the limited opportunity to cover all subjects during a period of formal education, and due to the rapid rate of change in technology, skillset, context, focus, or career in general, designers must, continue their training through knowledge-based resources. Ultimately, continuing education would take the form of a policy to ensure its cohesion and effectiveness at the national level.[21] Gilles and Giard (1993) conclude that continuing education for industrial designers is necessary, and it must be knowledge-based, which can be adapted from other disciplines, and offered at colleges or universities identified by the Association of Canadian Industrial Designers (ACID), the Design Exchange, and Human Resources Development under the federal government of Canada (p. 3).

The Context of Industrial Product Design (1999) is based on teachings from an introductory course led by Gilles for the Bachelor of Industrial Design (BID) at Carleton University. Through the text, Gilles presents a broad, yet thorough, overview of the practice. The

[21] Gilles and Giard (1993) argue that industrial designers must constantly upgrade and acquire bodies of knowledge through graduate studies, seminars, and reading (p. 2).

author designed the book to allow readers, whether they are students or not, to pick out what is needed regardless of order. Gilles' (1999) argument in bringing together so many aspects of industrial design is that existing books lack basic, foundational information, and as a result, so do students (p. 1-2). Chapter eleven is dedicated to theoretical ideas related to design that Gilles supported and in some cases expanded upon. Topics include inspiration, heuristics, logic, cybernetics, lateral thinking and imagination, some of which are further discussed under relevant philosophical methods.

2.2.3 Form Organization

Developed over roughly 40 years, with research contributed by SID students such as David Robert Wallace, Gilles compiled his ideas in 1991 with *Form Organization : New Design Procedures for Numerical Control*. The book presents a geometric method for developing forms with curved surfaces first applied during the DRU kettle redesign. Form organization is an alternative to both subjective artistic impulse and designing with structural geometry, instead relying on sections, or slices, to gradually build up changes in shapes (Gilles, 1991, p. 12-13, 19-21). Gilles argues that form organization allows designers to develop objects that offer more organic contours. Using conics, including ellipses, parabolas, hyperbolas and just a few loci, or points, these forms can then be transferred into digital formats if so desired (Figure 8). A computer program for form organization was developed, on which Everett, Gilles and Singer (1996) co-authored a brief article (p. 1-3), and Gilles collaborated with Singer on developing Form Organization models in a 3D computer format (Figure 9) (G. Singer, personal communication, June 22, 2018).

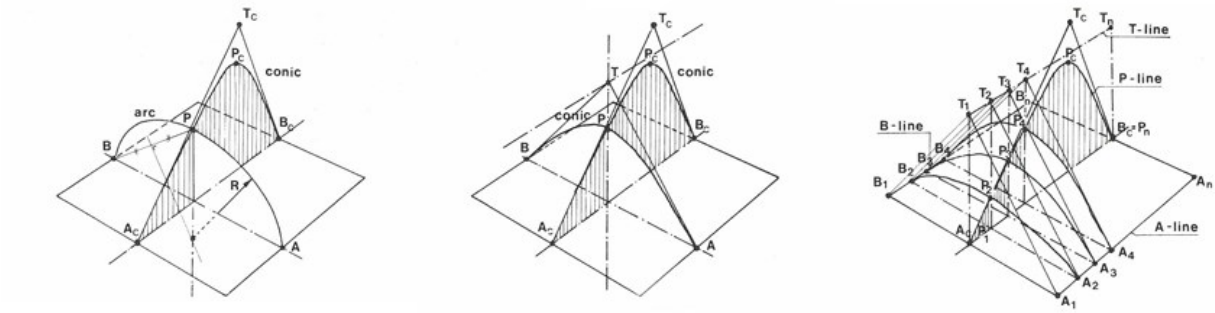


Figure 8. Use of conics and loci to create a basic form. Note. Gilles, W. (1991). *Form organization: new design procedures for numerical control*. London; Boston: Butterworth-Heinemann.

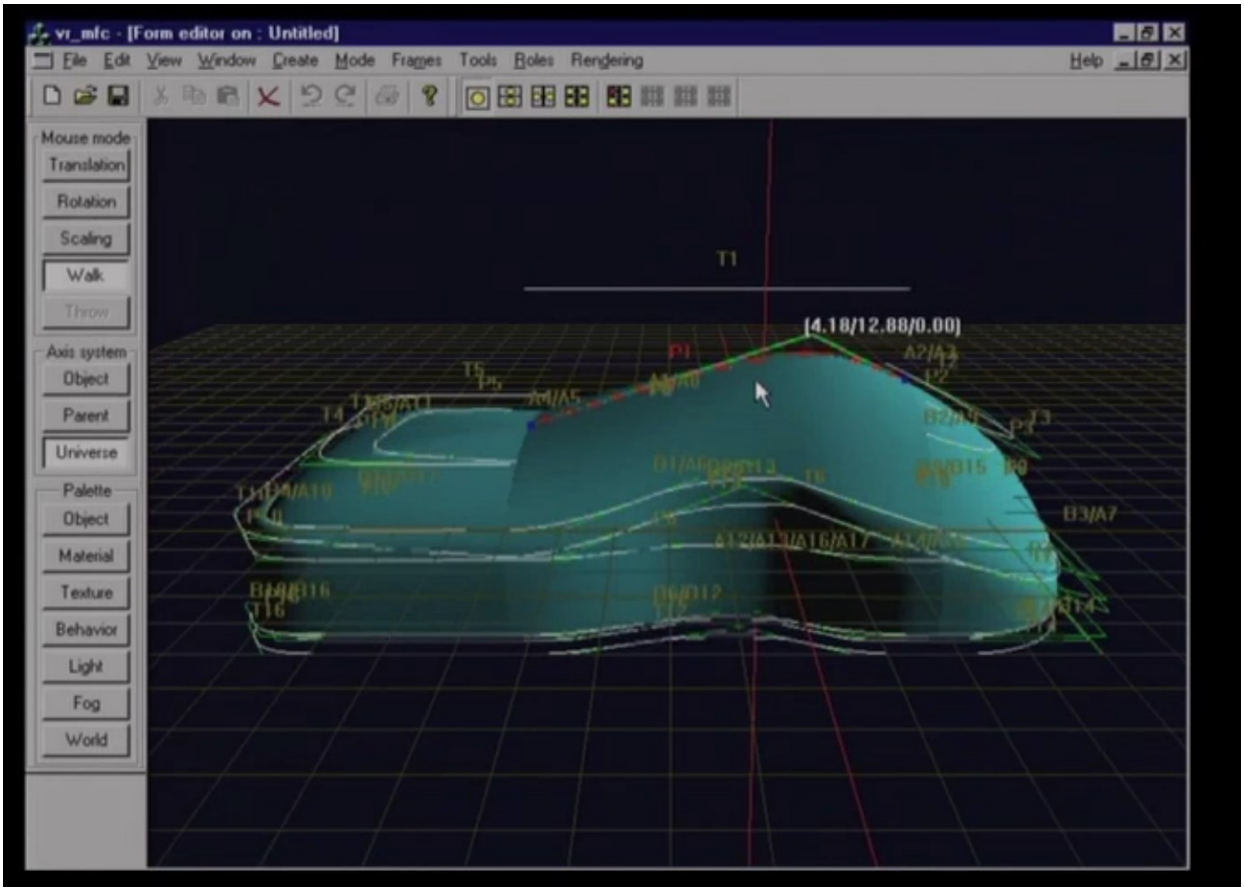


Figure 9. 3D Modelling software based on Form Organization, developed in collaboration with Department of Computer Science and Echo, the Centre for Experimentation and Development of Multimedia Technologies, Université du Québec à Montréal.

2.2.4 Delta Knowledge

Gilles and Paquet (1989) outline Delta knowledge, a form of knowledge and pedagogy that differs from scientific and social science research outcomes. It relies on a methodology of heuristics and an emphasis on applied knowledge, or acquiring knowledge through the act of doing; "know-how" rather than "know-that". Approaches to experimentation or problem-solving can vary given the setting, and rules are implied, dependent on context, and applied inconsistently. The authors identify various knowledge types,[22] with Delta knowledge coming from the particular, local, timely and the oral (Gilles & Paquet, 1989). It acquires new knowledge by doing, and can be seen developing out of management case studies, offering an opportunity for "reflection in action", rather than just recounting events or outlining concepts (Gilles and Paquet, 1989).

Gilles and Giard (2001) expanded on the concept of Delta knowledge and address the value of knowledge specific to industrial design. Although most North American industrial design education happens at the post-secondary level, existing knowledge from other areas is often applied rather than developing knowledge design-specific knowledge. At the same time, design training is forced into the arts, math and science and social science areas, while Delta knowledge is ignored. According to the authors, the type of knowledge specific to design, one of doing involving modelling and planning, is also known as design thinking (Gilles & Giard, 2001, p. 3).[23]

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[22] The knowledge types include Alpha for the arts, Beta for math and science, and Gamma for social science, and the additional area of Delta knowledge, used by both managers and designers that emphasizes "know-how", planning, and future consequences.

[23] To further their goal of developing knowledge specific to design, Gilles and Giard offer five approaches to design-specific pedagogy; the studio design project, case studies, the learner's report, entrepreneurship, and corporate partnerships.

2.3 Relevant Philosophical Methods

To present the more complex relationships between Gilles and his career as a designer and educator, it is necessary to look at relevant methods of thought. Gilles shared an affinity for a systematic approach to design with L. Bruce Archer. According to the British designer, "Design research is systematic inquiry whose goal is knowledge of, or in, the embodiment of configuration, composition, structure, purpose, value and meaning in man-made things and systems" (Archer, 1981, p. 31). In analyzing Archer's doctoral thesis from the late 1960s, Boyd Davis and Gristwood (2016) show how his systematic and science-based approach to design shifted to adapt more open-ended methods such as cybernetics and game theory for dealing with large, complex problems. Like Gilles, Archer's training in mechanical engineering was not altogether his choice, but seemingly more a matter of circumstance in pre-World War II England (Boyd David & Gristwood, 2016, p. 2). In addition to improving design methodology, both wanted to understand and develop a body of knowledge specific to design. Archer was aware of the apparent emphasis on a systematic approach towards the late 1960s related to the emergence of computing (Boyd David & Gristwood, 2016, p. 6), and Gilles developed form organization so that organic forms could be translated into numbers for processing by a computer. Archer (1979) admits how he had misspent his time trying to force research and techniques from other practices to match design's needs (p. 17).

Cross (2011) identifies the difference of abductive reasoning in relation to inductive and deductive reasoning. Its importance lies its ability to "shift and transfer thought between the required purpose or function of some activity and appropriate forms for an object to satisfy that purpose" (p. 10). Abductive reasoning can follow from the fuzzy front end (Møller Haase & Nhu

Laursen, 2018, p. 5), the first stage of the innovation process (Koen et al., 2002, p. 5). Paavola (2015) provides a more in-depth analysis of abductive reasoning, reviewing the work of one of its leading proponents, Charles S. Pierce, while John Dewey pursued a slightly different, if not parallel method of inquiry. Paavola looks at the differences and similarities between Pierce's notion of abduction, a mode of reasoning in addition to deduction and induction,[24] and Dewey's view of reflective thinking. He argues that there are aspects of abduction in reflective thinking, which can lead to further developments of abductive thinking. Like Archer's interest beyond a purely systematic method of design, abduction draws on inquiry and logic yet considers the interplay of pragmatic observation, hypothesis and action, both of which can be tied to design thinking. Although Gilles may have trusted intuition only after research and systematic thinking were exhausted, he recognized the importance of imagination in a similarly practical sense,

> Imagination is an extremely handy means of testing if something works. It is a word that every designer uses, but actually never realizes it: what if? What if I do this, what happens then? Drawing conclusions in your mind and seeing them before you. I can design sitting in my car. In principle I don't need a drawing board, I don't need paper or a computer programme. As a designer I can imagine anything. I can manipulate things in my mind. (te Duitts, 2003, p. 16)

[24] Paavola considers the unique aspects of abduction, as outlined by Pierce, in that while it is a method of reasoning, it can be likened to sensations, guessing, instinct, perception and even play. These attributes lend abduction to hypothesis based on observations.

2.4 Design Exhibitions

Exhibitions offer unique insights into design history by presenting objects outside of their usual context and the narratives that go with them. Indeed, the *Design in Industry* exhibition organized by Buchanan at the National Gallery of Canada in 1946 presented a survey of contemporary design and its application to everyday objects. While these are certainly the goals in creating an exhibition from Gilles' archives, it will not be organized in the usual manner by a curator or curatorial team according to a thesis, but rather rely heavily on process and public engagement.

2.4.1 Visits to Design Exhibitions

To get a sense for exhibitions about designers, the researcher visited *Michel Dallaire, de l'idée à l'objet* at Musée de la civilization à Québec near the formal start of the project, and later the Museum Boijmans Van Beuningen in Rotterdam where some of Gilles' work was displayed, followed by *Karim Rashid: Cultural Shaping* at the Ottawa Art Gallery (Figure 1-2, Appendix D). The Dallaire exhibition provided a historical overview of the designer's career, and included interactive exhibits, displays of emerging designers, and served as a good model for how the exhibitions based on the archive might look. Hosted at a provincial institution, the show carried quite a bit of authority about the importance in Québec of not just the designer, but design. The inclusion of Gilles' work amongst other designers at the Museum Boijmans certainly provided context for his career, but shifted the focus away from one designer and did not offer as much extraneous information as the Dallaire exhibition. However, the museum context, which also featured prominent art and historical displays, again leant the exhibition a certain amount of authority. As a civic institution, the Ottawa Art Gallery has developed art exhibitions that present historical context for artists, art collections and artistic movements. With the gallery's new space,

the Rashid exhibit communicated the designer's aesthetic without much context or insight into design history. By emphasizing a contemporary feeling, the exhibition did not convey a sense for its place within design history, and it did not seem as relevant to creating a display of materials from an archive. In comparing these examples with Gordon's (2009) analysis of the living history museum at Black Creek Village, exhibitions can be seen as either revealing or obscuring historical information. As such, developing an exhibition about Gilles based on new knowledge offered a way to further expand on ideas about design history in Canada. Applying the methodologies described in chapter three to address the initial research questions would determine its format and presentation.

In terms of the initial research questions, the literature review has presented a greater understanding of who Wim Gilles was. However, Overhill provided the only account of why he came to Canada, and the aspects of how he came to be in the position as a consultant to SID need greater exploration. Although establishing SID and Gilles' body of research after coming to Canada certainly do respond to the question of outcomes, it is difficult to contextualize these achievements based on the secondary sources of information. His work on Delta knowledge, form organization and design education could not be evaluated by the secondary sources alone.

Approaching the exhibition design portion of the project by applying the methodologies from Latour and Sanders necessitated primary research through the involvement of people that were familiar with Gilles and seeking out additional archives at the Museum Boijmans Van Beuningen in Rotterdam and Carleton University. Using an exhibition format allowed the researcher to gather and communicate knowledge designed in specific ways to reflect the goal of

expanding on what is known about Gilles, and Canadian design history in general. However, rather than creating a display through a single curatorial idea to convey that information, an additional research question asks what new knowledge can be gained through exhibition design informed directly by primary research in terms of its presentation materials and format. Chapter four will discuss the results of the process in terms of its application and effectiveness.

Chapter 3. Methods

Chapter three begins by reviewing approaches relevant to the methodologies and discussing the appropriateness of each. The specific methods of data collection, including visits to design exhibitions and archives, interviews, surveys and exhibition design then get outlined in terms of their practical and theoretical application. The procedures, associated materials, timeline and methods of processing and analyzing data are further discussed for the interviews, survey and exhibition design methods.

A basic account of the researcher's activities leading up to the project began with verifying the archive of material left at SID by Gilles for the director at the time, Dr. Thomas Garvey. These included objects, text and images that, while by no means complete, became more familiar and presented an overview of Gilles' experience as a designer and educator. Some of the objects had been 3D scanned so they could be reproduced, but these models needed verification, and in some cases, re-scanning (Figure 10). The researcher had the objects re-photographed by Patrick Lacasse from the Carleton University Art Gallery, and attempted to re-establish contacts with people in Holland that had shown an interest in the archive. These included Mienke Simon Thomas, a curator at Museum Boijmans Van Beuningen, and Marie Christine van der Sman, the previous director for Nederlands Archief Grafisch Ontwerpers (NAGO), the Netherlands Archive for Dutch Graphic Design.

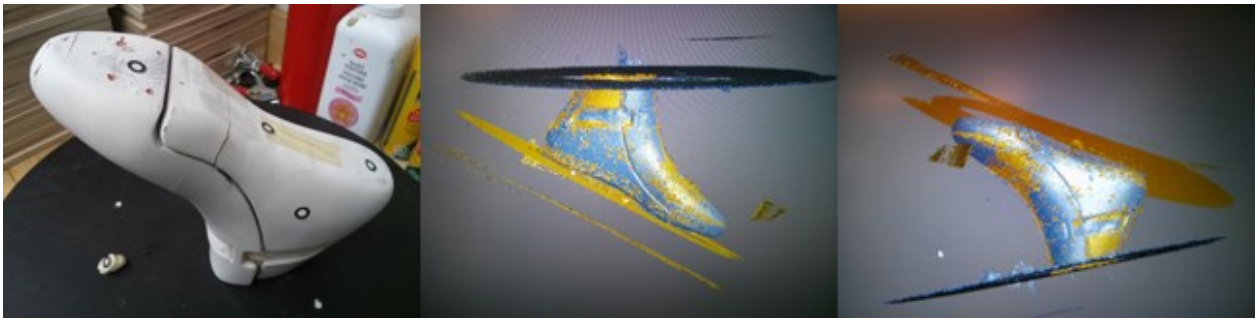

Figure 10. Verifying 3D Scans of Objects In Archive.

Practically speaking, five research methods were used for the project. As described in the previous chapter, visiting other design-related exhibitions gave the researcher a sense for how information could be presented in different contexts and possibly inform the exhibition design portion of the project. Archives at the Museum Boijmans in Rotterdam and Carleton University offered the chance to corroborate information related to the initial research questions with documentation either from Gilles or other sources. Interviews with colleagues of Gilles provided responses not only to the initial research questions but helped to contextualize Gilles within design history. Two separate surveys with Gilles' colleagues and SID undergraduate students would help to gather feedback about objects and images from the archives to draw out their significance. Exhibitions would be developed based on feedback from the surveys in an iterative process, with the first survey informing the first exhibition, and the second survey informing the second exhibition.

3.1 Visits to Archives

The project began with the archive of Gilles' materials at SID, which influenced the survey and exhibition design processes. Objects selected from the archive for the first survey included

objects and images that the researcher had worked with during the verification of the archive, or included some contextual information. Without trying to influence the survey too much, the researcher recognized that some of the objects, such as the DRU kettle, would likely be recognizable, while others would possibly be more obscure.

Reviewing materials in the archives at the Museum Boijmans and at Carleton University came later in the process to support responses to the research questions discussed during the interviews. Due to time constraints, the researcher focused on reviewing Gilles' correspondence held at the museum dated close to 1972, when he began coming to Carleton. Searching for archival information at Carleton happened after the researcher realized that Gilles' proposal for a graduate program, part of the archival material held by SID, identified the school as having initiated the program, not the federal government (Appendix P).

3.2 Interviews and Surveys

Before developing a display based on the archive, interviews established further context around the materials. Few written texts available to the researcher described Gilles' career after he left Holland. The narrative and qualitative information gathered during the interviews would respond to the research questions and inform the exhibition.

The interview subjects would also complete surveys about the objects and images in the archive. As with the use of probes described by Sanders and Stappers (2014, p. 7), the objects would draw out further narrative information related to Gilles, as well as quantitative data to reflect their democratic input by virtue of majority into the first of two iterations of the exhibition

design process. A second iteration of designing an exhibition would be based on surveys with undergraduate students from the Bachelor of Industrial Design program at Carleton. Again, the quantitative data from the surveys would reflect the student input. The following section will review the theoretical underpinnings of the methods to justify their use before going into more detail about how the data was collected, procedures and materials used and the overall timeline for the process.

3.2.1 Narrative Research Process

The research project addresses a historical narrative, and due to their inclusion of qualitative data, the interviews and surveys involve a narrative research process. Bold (2012) defines narrative as taking many different forms based on its purpose and medium, encouraging people to recognize their personal comprehension of narrative in terms of their own research (p. 17). Clandinin and Connelly (2000) describe how all participants in a narrative inquiry simultaneously live and tell their stories. Ideally, both the researcher and the subject's involvement is apparent and constructed collaboratively.

Andrews, Squire and Tamboukou (2013) discuss how narrative research differs from other qualitative frameworks. It has no apparent start or finish points, and no obvious thematic approaches based on content or particular aspects of language to analyze (Andrews, Squire and Tamboukou, 2013, p.1). In short, there are no rules about what are suitable materials or methods of investigation. However, narrative provides the opportunity to see different and sometimes opposing meanings, to compare them with one another and to learn about individual or social changes.

3.2.2 Ethical Concerns

Bold (2012) explains how ethical concerns vary between different cultures and societal groups, so the only solution is to understand the needs of these groups and individuals as they are involved in the research, and identify the ethical concerns in a person's own research (2012, p. 50). However, the main ethical concern is reducing harm to an individual or organization while producing benefits for participants throughout the research process (Bold, 2012, p. 52). Ethical issues such as gaining consent, storing data and reporting outcomes issues have been addressed by the researcher's granting of ethics approval through Carleton University.

Andrews (2013) discusses how interview data gets interpreted, specifically, by the researcher and that person's perspective, and transcriptions reflect decisions made at a point in time, and notes are made based on the character at the time of their writing (p. 206). As that perspective is never static, neither is the data. Thus, it is important to return to the data, to consider possible alternative interpretations (Andrews, 2013, p. 206).

For the purposes of the research project, the researcher interviewed and surveyed people on the basis of responding to the research questions. The results were not always as direct as expected. However, the researcher assured the subjects that potentially damaging information would not be shared beyond the interview.

3.2.3 Interviews and Surveys - Additional Considerations

Martin and Hanington (2012) review numerous methods for involving people with design. Several techniques relevant to the research project include the following. Design ethnography

involves a comprehensive and empathic understanding of the user, including their lives, language and the context of their artifacts and behaviours (Martin and Hanington, 2012, p. 60). Bowling (2014) notes that structured questionnaires and measurement scales may neglect crucial research areas and cannot measure human subjectivity (p. 365). Although there is not a user for the research project per se, there are viewers of the archive materials. Offering qualitative data, design ethnography also provides a comprehensive view of users from reviewing patterns or themes that emerge from research materials, which lend themselves to generative research and the development of concepts (Martin and Hanington, 2012, p. 60). The method is key to responding to the research questions and developing the exhibitions.

Directed storytelling is a social science method of narrative inquiry, lending itself to the interview process (Martin and Hanington, 2012, p. 68). Evenson (2006) points out how it allows designers to conduct research on an experience and quickly reveal patterns from other people (p. 232-233). Although the interviews followed the same list of questions, there were opportunities for less structured responses, especially since time and distance often prevented direct observations of the users. Rather, the interview questions provide prompts, similar to guiding questions such as who, what, where, when and how, and the technique helps support existing knowledge and identify areas for additional research (Martin and Hanington, 2012, p. 68).

Evaluative research can take the form of a survey and involve iterations, such as using feedback from users or viewers of the display to keep refining it and gathering data (Martin and Hanington, 2012, p. 74). Similarly, Tullis and Albert (2008) look at formative usability studies where adjustments are made throughout a process to improve the end results, like checking

cooking as it is prepared (p. 3.1). The key to both approaches is the iterations that allow feedback to influence the end result, which is appropriate to the surveys and the exhibition design exercise.

Analyzing the interview results and selecting roughly 3-4 paragraphs from each participant for the second exhibition design iteration occurred according to what was meaningful in terms of the research questions. In addition, there was a consideration of what to make available to the second iteration of survey respondents so they could respond adequately to the survey questions. As a result, the information tends to focus on who Gilles was and what he contributed to design and design education. In many cases, the narratives from the interviews address form organization and SID. It was also beneficial to use some of the personal anecdotes about Gilles to communicate his personality through the display, and to acknowledge the details that the interview subjects shared with the researcher. The interviews were relatively brief, not occurring over a long enough period to observe change amongst the participants. However, the surveys do provide some insights from the two iterations of exhibition design based on time due to the difference in age, level of experience and occupational status of the participants.

3.3 Exhibition Design

Drawing on Latour to bring meaning to the archival materials in relation to people and respond to the research questions, an exhibition design exercise became a suitable method to draw out and present information from questions about the materials. If Gilles were still alive, the researcher could speak directly with him and develop an exhibition that responds directly to the research questions. Given his passing in 2002, that is not an option. Instead, relying on the archive and the interviews and surveys, the activity of developing the exhibition feeds into

Latour's practice of making the archive public, and Sanders and Stappers' approach to collective creativity. The researcher also relied on the previously discussed notion of abductive reasoning, finding a solution for the exhibition amongst what seemed appropriate.

3.3.1 Object-Oriented Democracy

In organizing the 2005 exhibition *Making Things Public*, Latour (2005) considers investing, or re-investing objects with meaning, presenting an opening point for dialogue, what he describes as an "object-oriented democracy", emphasizing representation and reflection on that act (p. 6). In looking for an alternative to viewing public matters from a political point of view, the author suggests the patterns of emotion, disruptions, agreements and disagreements between objects or issues (Latour, 2005, p. 4). As a result, each object gathers a different assembly of relevant parties, making connections between them in a public space that is different from a political space that has become inadequate (Latour, 2005, p. 5). Hence, an object-oriented democracy attempts to bring together two meanings of representation, to gather people and to present or represent an object of concern to those who have been assembled (Latour, 2005, p. 6). Furthermore, it is one thing to assemble in a place, but there is equal concern over the means to identify those involved by the ways in which the focus of a debate is supported by evidence (Latour, 2005, p. 8). So, in the context of the project on Gilles, it is necessary to ask how the researcher selected or arranged objects for those taking the survey.

Relying merely on the archive might seem limited or arbitrary, but after becoming familiar with the materials, it presented objects from his career before and after he arrived at Carleton. Latour (2005) explains the challenge in representing only partial aspects of reality as

complete, for example, attempting to represent the global in a way that everyone would agree on (p. 14). In seeking feedback about Gilles' archive, it is equally impossible to present a complete picture. However, some consensus can be reached about Gilles from those that knew him or his work as matters of concern, while maintaining that the materials are incomplete in order to keep them open to debate, rather than closed as matters of fact.

3.3.2 Collective Creativity and Probes

Sanders' (2001) description of collective creativity relies on four stages to engage non-design participants; immersion in an experience, active memories and feelings about the experience, dreaming of the future and bisociation and expression of new ideas tied to the future experience (p. 3). The collection of objects help spur ideation, which is preverbal, and expression, where ideas are formally communicated. The survey based on the objects offers an immersive experience, provoking active memories and feelings, the future lies in its completion, leading to bisocation and expression tied to that future experience. Although all the people interviewed had design experience, they took on the role of non-designers, whereas the researcher's role was to empathize about their ideas of Gilles in order to help make that knowledge present.

As part of participatory design, probes may come from an expert-led direction, inviting users to reflect and offer information about their experiences to provide inspiration to designers (Sanders and Stappers, 2014, p. 7). For purposes of the project, the archive of materials from Gilles will serve as a probe for gathering information about the research questions.

3.3.3 Research Through Design

Further to Latour and Sanders, Stappers and Giaccardi (2013) discuss how research itself has become recognized as part of designing products or services and design activities, including artifacts, allow for the development and communication of knowledge (p. 1). In terms of research through design (RtD), Stappers and Giaccardi (2013) consider design activities that help create knowledge allowing a complex problem to become understood by iterating prototypes about it.

As defined by the authors, knowledge is connected to things in the world that can direct people's actions (Stappers and Giaccardi, 2013, p. 4). Knowledge can be explicit, as with a written statement, or tacit, where the artifact is the statement. At the same time, knowledge generated through design tends to be ambiguous or incomplete, and tacit knowledge needs to be communicated not just with words but artifacts and experiences (Stappers and Giaccardi, 2013, p. 32). As with Latour's "object-oriented democracy", prototypes can guide research by asking questions, but their meaning for the sake of research is determined by framing (Stappers and Giaccardi, 2013, p. 45). In the context of the research project, the materials from the archives serve as prototypes and the exhibitions provide framing. Koskinen et al. (2011) consider the showroom, or exhibition in the case of the project, to present the prototype and how it is framed to share knowledge (p. 57). Stappers (2007) also describes how ways of sharing ideas, such as through a publication, may force the researcher to conform to certain framings and references for the sake of credibility (p. 60). Similarly, and for better or for worse, exhibitions can have many related artifacts, including the invite card, poster, catalogue and Web or social media presence.

Looking at the project on Gilles through RtD, the exhibitions serve as an artifact of something made, rather than a prototype that typically leads to mass production, while the complex problem involves the research questions. Each exhibition will also feature both explicit text statements and tacit knowledge in the form of artifacts and the experience of seeing the exhibition in person. The exhibitions are not necessarily tangible due to the display cases, but the experience of either in the given space can have that quality. With further regards to framing, the exhibitions will change according to the space they are set up in and the viewers experiencing them.

3.4 Interviews

Interviews were conducted to gather a wide range of information about Gilles from his former colleagues and students and the archive of his materials at Carleton University. The interviews would help develop an understanding of Gilles that considers the research questions. The interviews would also provide important quantitative information in terms of a chronology and qualitative information about Gilles and the materials in the archives.

3.4.1 Procedures Followed, Materials Used

Each interview participant was sent a letter of invitation (Appendix G), two copies of the Ethics waiver (Appendix H) and a copy of the questions before the interview (Appendix I). The participant signed two copies of the waiver, and one copy signed by the researcher was returned to the participant. Whether interviewed in person, by phone, or online video communication software, the interviews were recorded and later transcribed into a word processing document. The researcher also kept notes in case the recording device failed and to help process the

information or record alternate questions. Interviews typically lasted roughly one hour, with some lasting three hours.

3.4.2 Timeline

The research process as it relates to the methodology formally started with meeting Brian Burns, who met Gilles in the early 1980s and was invited to teach at SID, and continues to teach in the program to this day. The researcher met Burns on 24 January 2018 to discuss possible interview candidates and concepts related to Gilles.[25] Another meeting occurred on 31 January to further review the materials in the archives and materials volunteered by Burns.

Once ethics approval was received, interviews could commence.[26] Bjarki Hallgrimsson helped identify candidates with a goal of speaking to ten people. Knowing Burns would participate in a formal interview, Heidi Overhill, a former student of Gilles, was contacted on 26 March 2018 and provided her availability as 4-6 weeks after 26 April. Eight interviews eventually occurred, the first taking place with Jacques Giard on 6 April, and the last interview with Georges-Frédéric Singer occurred on 22 June. Often, one interview would inform who the next candidate would be, so the process unfolded fairly organically, and of course, relied on

[25] Leading up to the formal start of the project, conversations about Gilles took place with Thomas Garvey between fall 2016 and spring 2017. The researcher met with his advisor Bjarki Hallgrimsson and co-advisor Michael Windover on November 6 and 20, 2017 to discuss research directions and approaches. The researcher also met with Monica Ferguson from the University Archives on November 7 to discuss possible exhibition spaces.

[26] Ethics approval was needed to conduct interviews and the surveys, and an initial application was submitted on January 24, 2018. It was sent for review as of February 1. As of February 16, the researcher received feedback about changes to the application, which was re-submitted on February 26, 2018. Unfortunately, due to a labour disruption at Carleton University throughout the month of March, the revised submission was not approved until March 22, 2018.

people's availability.[27] None of the candidates contacted were unwilling to be interviewed and the researcher assured each candidate that confidentiality of sensitive information would be maintained.

A complete list of the interviewees is provided below with the dates and method by which they were interviewed.

1. Jacques Giard, online interview, April 6, 2018
2. Brian Burns, in person at Carleton University, April 18, 2018
3. Heidi Overhill, online interview, May 24, 2018
4. Koen de Winter, in person at Carleton University, May 24, 2018
5. Gilles Paquet, in person at University of Ottawa, June 11, 2018
6. Martien de Leeuw, in person at Carleton University, June 13, 2018
7. Rudi Verelst, in person at Beaconsifield, Quebec, June 14, 2018
8. Georges-Frédéric Singer, phone interview, June 22, 2018

3.4.3 Methods of Processing and Analyzing Data

Conducting interviews with eight people between April and June resulted in a large amount of data. Transcribing an interview would begin shortly after it happened by using audio editing software to slow down the playback speed. A one-hour interview would typically take four hours

[27] Burns suggested articles that Gilles had published on education (personal communication, January 24, 2018). Jacques Giard was the first person formally interviewed, having found some of the articles Burns mentioned listed on Giard's online resume. An article written about Gilles by Heidi Overhill mentioned a paper on Delta knowledge, which was co-authored by Gilles Paquet and found through Paquet's Web site. When first contacting Overhill, she mentioned Koen de Winter, and also recommended speaking with Georges-Frédéric Singer. De Winter suggested interviewing Rudi Verelst, and Burns and Hallgrimsson both suggested speaking with Martien de Leeuw.

to transcribe. In some cases, acoustics or background noise affected the recording quality and made the process more difficult. The transcription of the audio files was completed in late August and yielded 135 single-spaced pages of notes.

3.5 Surveys

The interview subjects would complete surveys about the objects and images in the archive, and the results would form the basis for an exhibition. A second iteration of designing an exhibition would be based on surveys about the first exhibition, this time completed by undergraduate students from the Bachelor of Industrial Design program at Carleton. Using more than one survey would allow the researcher to gather more feedback about Gilles from different groups and apply Latour's exhibition design approach on at least two occasions, showing how the knowledge about the archive could accumulate, shift or change. As with Sanders' and Stappers (2014) discussion of participatory design, the objects would serve as probes and draw out further narrative information related to Gilles, as well as quantitative data that would inform each iteration of the exhibition design process.

The survey provided quantitative and qualitative feedback for developing an exhibition through an iterative process, reflecting methodologies from Latour and Sanders in terms of making the archive public and collective creativity. The interviews also influenced the first iteration of the exhibition design exercise in terms of information that could inform or be included in the display. Although the interviews and surveys were both open to interpretation, the surveys offered a quantitative basis for developing the exhibition that was not arbitrary.

Ideally, the interview and survey activities would have happened consecutively at Carleton where the archives were located (Figure 11). However, a space to view the objects only became available on 10 May, and the interviews began on 6 April. Also, it became apparent during an interview held in the space that bad acoustics and moving to view objects while the audio recorder remained stationary produced unintelligible results. Video recording such interactions would have been optimal, but only three of the eight interviewees could come to Carleton in person. Hence, it made more sense to make the survey accessible online to those already interviewed or those located outside of Ottawa.

Figure 11. Archive materials in Azrieli Pavilion 450 Mezzanine.

Although the main challenge of the first exhibition design exercise was not being able to provide access to the objects in a physical space, the survey had a potential benefit of treating the objects more democratically. However, the quality of documentation, and the lack of scale or

familiarity with the objects could challenge that potential. Fortunately, all the candidates for the first iteration had experience with industrial design and knowledge of Gilles' work, so it was assumed that they would focus on those two areas during the survey.

3.5.1 Procedures Followed, Materials Used - Survey 1

The first survey was developed using Google forms so that participants did not have to be physically present. Photos of the materials from the archive were posted online allowing for responses to 28 images plus two introductory questions (Appendix I). Two introductory questions asked each candidate's involvement with industrial design and level of education. The remaining questions asked for quantitative feedback about each image on a Likert scale with 1 being the most interesting and 5 being the least interesting. The term "interesting" was used as it was open-ended, and could relate to something subjective or personal, but there was also an assumption that all of the survey participants had a background in industrial design, and that would help situate their assessment of the materials from the archive in that field. Qualitative feedback in terms of comments could also be provided. Once a person completed the survey and submitted it using the online form, the researcher downloaded it as a spreadsheet.

3.5.2 Timeline – Survey 1

The first two attempts using the on-line survey in late May were unsuccessful, owing to how it was framed by the ethics protocol, the lack of quantitative feedback and technical difficulties.[28]

[28] Frankel suggested a Likert scale be incorporated rather than just relying on qualitative feedback (personal communication, May 25, 2018). When Martien de Leeuw attempted to use the survey in the space with the researcher on June 13, 2018, it would not work properly.

These shortcomings were corrected, and eventually, seven participants offered feedback between 29 June and 8 August 2018.

The quantitative data from the Likert scale on the surveys informed the choice of materials to be presented in the first iteration of the exhibition. The qualitative data from the interviews were added to the first iteration of the exhibition as supplementary text, providing context for Gilles and the objects. In that sense, the feedback helped make the objects in the archive public.

The qualitative data from the interviews was added to the first iteration of the exhibition as supplementary materials, and the qualitative data from the first survey was used as exhibition labels for the second iteration of the exhibition. Combining the methods from Latour and Sanders and Stappers, the feedback helped make the objects in the archive public.

3.5.3 Methods of Processing and Analyzing Data – Survey 1

After the final survey submission, the researcher analyzed the data according to numerical values of the Likert scale feedback. A stacking bar chart provided a way to quickly view outcomes of the feedback for all the objects (Figure 12). The following rules based on the researcher's interpretations of patterns in the data determined the objects and materials to be used for the first exhibition and to avoid creating an arbitrary display of objects.

- A score of 15 or less indicates that at least half of those surveyed gave the object a score of 2, for 'interesting', constituting a majority.

- Objects were chosen from survey results that had 4 or more scores of 2 or less, with a maximum combined score of 15.
- The total points for the objects chosen still showed a variety of scores, between 1 and 4.
- Many of the scores changed for each participant, with only the scores for one survey response all given as '1' for being 'most interesting'.
- As a result, 15 objects were chosen for the first display.

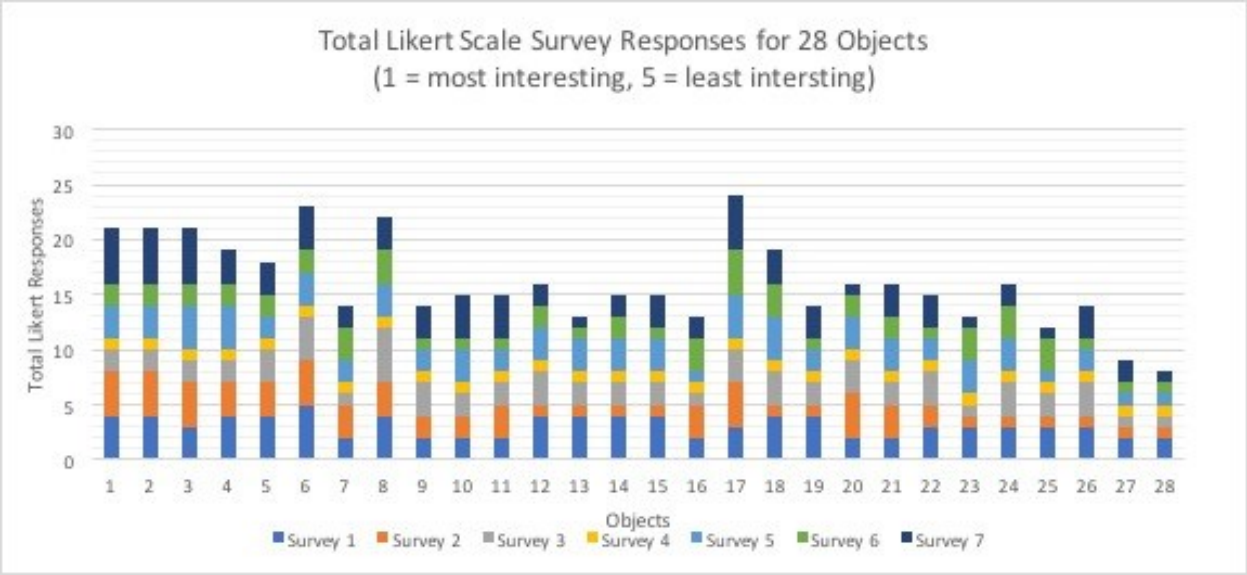

Figure 12. Survey 1 Results.

3.5.4 Procedures Followed, Materials Used – Survey 2

The goal of the student survey was to gather feedback that would help create the second and final iteration of the exhibition. Questions were added to the form used for the first survey to help determine future research directions (Appendix K). Ideally, twenty students would participate, offering a wider range of input, but from an audience likely only familiar to Gilles through the materials on display.

The anonymous survey was developed on paper so that participants would be present at the exhibition with the researcher nearby. The first exhibition had a physical location on the fourth floor of Azrieli Pavilion at Carleton University, allowing students to be present. Three wall mounted display cases housed reproductions of images and physical objects that were presented in the first online survey (Figure 15-18). These were numbered to correspond with fifteen Likert scale questions similar to the ones used for the first survey. In addition to providing information about their age, gender, their involvement with industrial design and their level of education, the students would once again evaluate the materials on display to help develop the second exhibition. Space was also provided for qualitative feedback through comments.

In addition to the Likert scale questions, which provided quantitative and qualitative feedback about the objects and photos of objects, students were asked to respond to questions to help evaluate their knowledge of Gilles, both before and after the exhibition, his relevance to SID, design practice and Canadian design history, and their knowledge and perception of SID. Quotes from the interviews were presented in the display that addressed the original research questions and provided information for answering the questions on the survey form. Once a survey was completed, the researcher collected it from the participant and input the data from the paper form into a spreadsheet similar to the one used for the first survey.

The second survey was available to students between 15 September and 7 October, with surveys actually taking place between 20 September and 2 October. The researcher was available to meet students from 12-1 pm and 5-8 pm on weekdays, and 10 am – 3 pm or 10 am – 5 pm on weekends. These times were chosen due to availability based on the researcher's work schedule.

If students could not meet during these times, they could contact the researcher to request alternate arrangements. It soon became apparent that students had very busy schedules.

3.5.5 Timeline – Survey 2

The survey was directed at first, second, and third year students in the Bachelors of Industrial Design program at Carleton. It was assumed that these students may not have as much knowledge about Gilles or the school, and would be forced to pay closer attention to the exhibition materials for their survey responses. The surveys were once again anonymous, but participants were compensated eight dollars' cash for a maximum of thirty minutes of their time to complete the survey. The amount of money was chosen as reasonable compensation close to the provincial minimum wage, but not so much that it might distract from the study.

Ideally, students would take the survey individually so that their behaviour would not influence one other. However, due to availability of students, nine of the fourteen surveys were done by a group from a second-year class. Another three participants were in second year, and two participants were in third year. Despite publicizing the survey amongst SID instructors and using posters (Appendix L), social media, and visits to two classes to speak about the research project, fewer students participated than the twenty anticipated by the researcher. Hence, the survey availability had to be extended an extra week from 30 September to 7 October to get more students involved. However, they showed interest and were willing to participate if they already happened to be near the display space and were approached directly.[29]

[29] The researcher placed paper posters in five locations on campus, with three in SID, and announced the project to a first-year class of roughly 100 students, and a second-year class of roughly 20 students. The second-year class was located down the hall from the display space and 9 people from that class

3.5.6 Methods of Processing and Analyzing Data – Survey 2

After the final submission, the researcher once again analyzed the data according to numerical values of the Likert scale feedback. A stacking bar chart showed the outcomes of the feedback for the materials on display (Figure 12). The following rules based on the researcher's interpretations of patterns in the data determined the objects and materials to be used for the second exhibition and to once again avoid creating an arbitrary display of objects.

- A score of 35 or less indicates that at least half of those surveyed gave the object a score of 2, for 'interesting', constituting a majority.
- Objects were chosen from survey results that had 7 or more scores of 2 or less, with a maximum combined score of 35.
- The total points for the objects chosen still showed a variety of scores, between 1 and 5.
- Many of the scores changed for each participant.
- As a result, 6 objects were chosen for the second display.

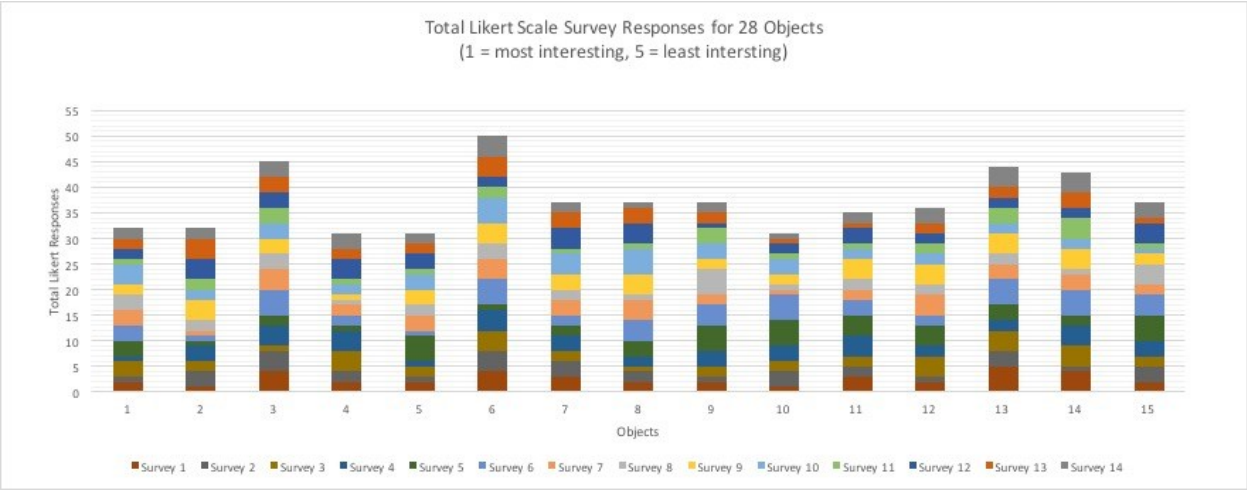

Figure 13. Survey 2 Results.

participated as a group following the end of class, while no students from the first-year class located in McKenzie building participated.

3.6 Exhibition Design Exercise

The collection and recording of data for the exhibition design exercise took place during the interview and both surveys. As indicated earlier, two surveys were conducted with the opportunity to develop two separate exhibitions. Feedback from the first survey determined which materials from the archive would be used for the first exhibition, and excerpts from the interviews would be presented as text. The text would allow students viewing the first exhibition to respond to questions on the second survey about Gilles and SID. The interview text would also be included in the second exhibition, which was developed using student feedback about the archive materials presented during the first exhibition. In that sense, the exhibitions are a product or result of the previous activities. The methodologies of Latour and Sanders would become evident through the presentation of the materials in the archive. Additional data was not collected and recorded during the exhibition design phase of the project, except in the form of photo documentation.

3.6.1 – Procedures Followed, Materials Used – Exhibition Design

The following procedures were followed in the design of each exhibition. The archive materials used for display were selected based on the survey results. To present those materials in a new context was not a completely neutral activity, and rarely is.[30] The researcher worked with the spaces made available at Azrieli Pavilion and the Discovery Centre for Undergraduate Research and Engagement. These spaces offered purpose built display areas, however, their physical properties differed significantly, as well as their context.

[30] Preziosi (2004) describes how museums of the nineteenth century that emerged from private collections, or "*wunderkammern*", developed specific ways of ordering knowledge according to national ideologies (p. 76).

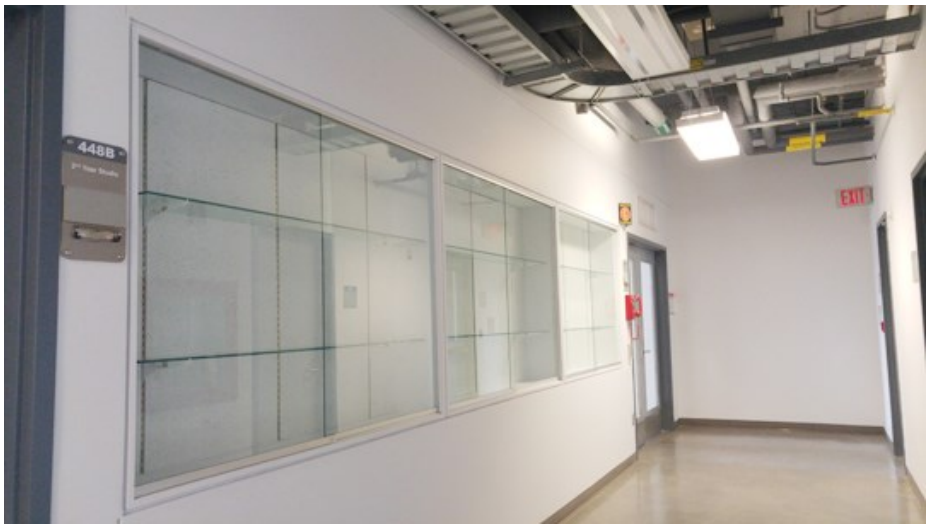
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Figure 14. Display Cases In Azrieli Pavilion and MacOdrum Library.

Whenever possible, the actual materials from the archives were used in the display, including the Micro Computer prototype, so that the experience of the materials would be less mediated. The dimensions of the objects helped determine how they could be displayed in each location. There were few additional resources for printing, creating displays, mounting works, or significantly altering the space and experience of the viewer as seen with the Michel Dallaire and Karim Rashid exhibitions. Foam core was used to present the text panels and photo reproductions of works for its clean appearance and affordability. Hence, the researcher adapted a site-specific approach to designing each exhibition, working with the attributes of each space and the materials to be displayed.[31] For instance, the brackets for shelving in the Azrieli Pavilion display cases could not easily be hidden. Leaning the text or image panels against the back of the display case rather than mounting them to the wall did not draw attention to the brackets, but also gave the panels an object-like quality. Numbers corresponding between the objects or photos of

[31] According to Kwon (2004), site-specific art gives itself over to its unique physical context, whereas modernist art is indifferent to the site (p. 11).

objects and the survey form allowed participants in the second survey to match the materials with the Likert scale questions on the form. No further information was given about the materials in the first display so that the students would not get overwhelmed with reading and neglect searching the interview quotes for responses to the survey questions.

The Discovery Centre display case allowed for larger images to be presented, but it was important that they did not fill the entire back of the case like wallpaper, nor that they would appear too small, either.[32] The second survey identified four objects that were represented by photographic reproductions in the first exhibition, and two objects represented by the originals form the archives. Larger reproductions of the photographs were created for the second exhibition, and the two objects were recreated from 3D printing facilities available in the Discovery Centre.

3.6.2 Timeline – Exhibition Design

Since the exhibitions were based on the results of the interviews and the surveys, the research occurred in the following order: conduct the interviews, conduct the first survey, develop the first exhibition based on feedback from the interviews and first survey, conduct the second survey, develop the second exhibition based on the interviews, second survey and conclusions about the process. The exhibition design portion of the project was contingent on the selection of objects through the surveys and the availability of space. The upper mezzanine space in Azrieli Pavilion 450 was confirmed as of 8 May for getting feedback on objects from the archive, and materials were moved into the space as of 17 May. The materials remained in place until the set-up of the

[32] The images were re-sized to 18” high, or 84% of the height of the case, which was 21.5” high.

first exhibition during the week of 17 September. The materials in the display case in Azrieli Pavilion were installed between 13 - 17 September to be ready for students taking the survey, the first of which occurred on 20 September and the last taking place on 2 October. Installation of the second exhibition occurred between 19 - 26 October.

Having two spaces available was fortunate, and the researcher wanted to maximize the potential and visibility of the project. Strategically, the locations made sense for gathering feedback from Industrial Design students during the first exhibition, then transferring them to a different space that would give the second display access to a broader audience. However, the opportunity for using two separate display locations developed gradually along the course of the project.

The display case in the Azrieli Pavilion was presented as an option to the researcher by Bjarki Hallgrimsson on 20 April 2018. Its availability for the project was later confirmed on 16 August. Possible display spaces within the library were considered by first contacting Patti Harper and Monica Ferguson on 7 November 2017. However, by 6 June 2018, spaces were becoming less available, and the outcome of the survey, which determined the exhibition design, was largely unknown. By 17 April 2018, Alan Steele confirmed the possibility of using the Discovery Centre's display case on the fourth floor of the MacOdrum Library. By 18 May 2018, the exhibition was confirmed as being in the space during the fall, and by 12 June, the exhibition was confirmed in terms of the archive materials being available, even though the survey had no respondents. The installation of the second iteration of the exhibition in the Discovery Centre display case was confirmed by 17 August as happening from late September to December. The

case was measured on 17 September, and the installation was pushed back until the week of 8 October due to a lack of responses on the second survey, and then confirmed for the week of 15 October as of 10 October.

The exhibitions did not consist so much of processing and analyzing data but presenting it as information or knowledge. Although they may be seen as a result of the surveys, some curatorial methods used in their design are worth discussing. The exhibitions presented the materials in a chronological fashion, starting with older materials on the left side of the display area and moving to the right. That ordering might not have been immediately apparent in the first display, given the lack of information panels with dates. However, dates were provided in the second exhibition to present a more complete view to a new audience that might have much less experience with or knowledge of design.

For the second exhibition, additional images of projects from Gilles' career were presented in a 4 inch by 6 inch photographic format to represent personal memory or history. The additional images were not part of the original selection for the first survey, or in some cases, the archive at Carleton. In part, this reflected the limitations and incompleteness of the archive and the project, but also hinted at the connectedness of the objects on display to what might have been hidden, as described by Latour. Some of the images were photos of the archival material held by the Museum Boijmans Van Beuningen in Rotterdam, which consisted of Gilles' detailed personal files, and provided further background information about the materials found in the archive at SID. Two photos included images of people to balance out all of the images of products that featured no people. These images featured Gilles with De Leeuw posing for a

newspaper article, and a class photo from 1989 featuring students, instructors and staff. Although all of the materials could not be included in the research project, the researcher displayed these images with the final exhibition to create a connection with other archives and contexts, and a few were even generated by software programs or found on the Internet, another archive altogether.

Chapter 4. Results & Discussion

Chapter four presents the results and findings of the interviews, surveys and exhibitions in light of the research questions. The interview questions are reviewed, as well as the interview process and the outcomes. The survey questions and format are looked at in terms of the different iterations and the resulting exhibition design exercises. Unlike the literature review, which was based on secondary sources, the results and discussion involve primary sources to offer claims of new knowledge.

4.1 Applying Latour's Methodology

The following section will respond to the questions posed at the end of the literature review, in terms of how Sanders' and Latour's methodologies could be applied and whether they were effective. Latour's writing on the *Making Things Public* project offered an appropriate model for working with an exhibition design exercise, describing an open-ended way to draw out the significance of materials in relation to people. The interview subjects were the best candidates to inform that part of the research project, allowing the researcher to make the most of the information provided in a format that was readily shared and used for further iterations. Not only would the interview subjects have input into the content for the exhibition, they would select the objects that would be on display. The selection of objects allowed an opportunity for bisociation and collective creativity, providing the researcher with new ideas about the archive in terms of what people felt were significant. Visits to other exhibitions provided a basis of comparison for how the research project might be presented. However, the role of curator would be altered in terms of selecting the information that would be presented. Of course, the final presentation of

each exhibition was determined by the researcher, keeping in mind the goal of addressing the research questions and the next exhibition design iteration.

Having conducted two iterations of the exhibition design exercise, applying Latour's method has been effective at addressing the research questions. Each of the interview subjects provided a wealth of information that was not available from the secondary sources. The interviews contextualized the importance and relevance of establishing SID and Gilles' research projects. Perhaps more important is that the survey portion of the exhibition design exercise allowed that information to be presented and actively used to inform the next iteration. However, if circumstances were slightly different, especially if the interview subjects and primary research materials were not available, using Latour's methodology would be less effective, unless the research project had been altered significantly.

4.2 Interviews

The resulting 135 single-spaced pages of transcripts from the eight interviews offered a lot of information, and only a small fraction of it could be presented in the first iteration of the exhibition and in the thesis. The resulting nine pages of excerpts were selected as they responded most directly to the research questions, complemented one another without too much repetition, and offered information to the students viewing the first exhibition so they could respond to questions in the second survey (Appendix M).

The three research questions of who was Wim Gilles, why did he come to Carleton, and what was the outcome were used to group the interview excerpts into three themes of identity, purpose and outcome. The results offer a summary of the question responses. The interpretation

of the observations are an example of the narrative research and directed storytelling methodologies discussed in chapter three.

4.2.1 Themes and New Knowledge - Interviews

The following section summarizes the results of the interviews, which have been synthesized with the interview questions in Appendix M. In terms of identity, Gilles' approach to design was technical and based on an understanding of materials, processes and engineering. Giard likened this to his training as an engineer (personal communication, April 6, 2018). Gilles' age during the Second World War prevented him from certain work opportunities and the option to study further, so he learned to rely on trial and error, reason, and only trusted his own opinions when he had strong evidence that they were correct (K. De Winter, personal communication, May 25, 2018). According to De Winter, heuristics and a rational thinking process were more important to Gilles than knowledge, and he only applied intuition to fill gaps left by research and systematic thinking (personal communication, May 25, 2018). He was influenced by issues of social importance, and while Verelst noted his admiration for designers such as Buckminster Fuller (personal communication, June 14, 2018), De Winter explained how his own approach, such as Form Organization, sought a solution that fit the problem, rather than the other way around (personal communication, May 24, 2018). De Leeuw observed how Gilles used rules and fundamental questions, such as the size of the production run, to guide the development of a product (personal communication, June 13, 2018).

Burns emphasized how Gilles influenced design through education focused on people (personal communication, April 18, 2018). According to Giard, he made connections between

the school at Carleton and industry, and believed the function of an object should be as important as its form (personal communication, April 6, 2018). As outlined by De Winter, Gilles taught the necessity for questioning assumptions when designing a product, the development of design-specific knowledge, and giving back to one's profession through teaching others (personal communication, May 24, 2018). Giard, Overhill and Singer were all able to verify how Gilles came to Carleton through an initiative of Carleton University and the federal government (J. Giard, personal communication, April 6, 2018) (H. Overhill, personal communication, May 24, 2018), and that he was keen to affiliate design with engineering (G. Singer, personal communication, June 22, 2018).

De Winter described Gilles' impact on design by wanting to return to the "three-tradition model" of the history of industrial design, which included modern Scandinavian craft and American commercial design, rather than focusing on the Bauhaus and Walter Gropius. To Gilles, the combination of modern Scandinavian tradition based in craft, and the American commercial tradition featuring designers such as Sinel, Teague, Bell Geddes, Loewy, and Dreyfuss that he witnessed during a 1953 study tour to the United States formed the professional tradition of industrial design, something he applied to the program at the Design Academy Eindhoven and Carleton University (K. De Winter, personal communication, May 25, 2018). Looking at the outcome of his move to Carleton, Gilles used the opportunity to continue developing his ideas on form organization. Simply defined, form organization is about generating organic forms so they may be reproduced by a machine (G. Singer, personal communication, June 22, 2018). De Leeuw underscored the importance of form organization as a method for accurately communicating the technical aspects of a form between two or more

people (personal communication, June 13, 2018). Paquet was influenced by what he learned from Gilles and co-developed as Delta knowledge (personal communication, June 11, 2018). As discussed by Paquet (personal communication, June 11, 2018), Delta knowledge and Gilles shared many traits with Schön's (1983) analysis of "reflection-in-action", especially how contemporary professionals are expected to deal with increasingly complex situations with inadequate sources of knowledge, "Professionally designed solutions to public problems have had unanticipated consequences, sometimes worse than the problems they were designed to solve." (p. 4).[33] [34]

Burns noted how Gilles also made connections across the campus (personal communication, April 18, 2018), while De Leeuw and Verelst recalled how he ensured that students had a technical understanding of design that emphasized industry experience (M. de Leeuw, personal communication, June 13, 2018) (R. Verelst, personal communication, June 14, 2018). Burns, Overhill and Singer indicated how his legacy for design goes beyond his own career of making products with the ongoing success of the school he was chosen to establish (B. Burns, personal communication, April 18, 2018) (H. Overhill, personal communication, May 24, 2018) (G. Singer, personal communication, June 22, 2018).

[33] Schön outlines knowledge that is both tacit and implicit in response to the crisis faced by professionals, not just in their own fields, but how they are perceived within society, and details an example of an exchange between architectural designers to demonstrate his theory. It is fitting that Gilles and Paquet would develop Delta knowledge as an aspect of design thinking.

[34] Schön's (1983) description of "technical rationality", the result of Positivist thought firmly established in universities since the nineteenth century (p. 30-31), can be likened to Paquet's own intolerance of people thoroughly entrenched in their own discipline without any practical knowledge (personal communication, June 11, 2018).

4.2.2 Discussion and Implications – Interviews

The interviews offered information beyond Gilles and the research questions, addressing design, history, education and human relationships. However, the process must be considered as part of the researcher's desire to create a narrative that made sense in terms of the research questions. As outlined by Bold (2012), the researcher was encouraged to recognize a personal comprehension of narrative in terms of the research project. Hence, all of the interview material is open to interpretation, and although some responses are quite straightforward, their selection from the overall interview, and even their transcription from the audio may be seen as an interpretation of what was observed.

All the interview candidates had access to the research questions stated in the letter of invitation, along with a copy of the interview questions. They might have prepared responses ahead of time, or understood the meaning of the questions in a particular way. As a result, the conversation could take different and unexpected turns, and even circle back on itself. So, the researcher used the list of questions as a framework to maintain the focus of the interviews, not as a strict criteria. What may not be apparent in the results is the incredible fondness interview subjects expressed for Gilles, and the time that they selflessly gave to speak about him.

Despite how much the interviews could be interpreted, they provided the most direct answers to the research questions. Only a small fraction of the literature review focused on Gilles' career in Canada, providing insights into who Gilles was, why he came to Carleton and what the result was. For the sake of design history in Canada, especially as a basis for design training and education, more resources that address design education should be made available.

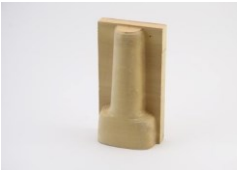
In terms of gathering information based on interviews, people were enthusiastic and forthcoming about sharing their knowledge and experience while also suggesting further people to interview. That is likely a reflection of Gilles' popularity amongst his colleagues, that they are enthusiastic about design, and that they are all enthusiastic about education. Developing a project around a much less agreeable subject, where there are conflicting views, or instances of trauma, would likely prove more challenging. In either instance, it seems important these experiences should somehow become part of the results.

4.3 Surveys

Both surveys generated themes and new knowledge in terms of the objects they would identify for the exhibitions using quantitative feedback. They also provided the opportunity to collect qualitative feedback about the materials and future research directions.

4.3.1 Themes and New Knowledge – Survey 1

The first survey gathered quantitative data using a Likert scale to determine the significance of the objects from the archive shown in Table 2. The results that met the criteria for selection set out in chapter three comprised the materials for the first exhibition.

1. 
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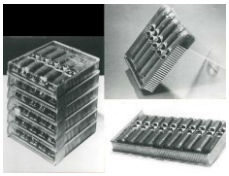
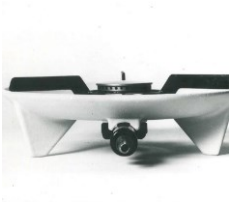
24. 
25. 
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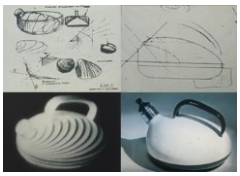
27. 
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Table 2. The first survey determined the significance of 28 objects from the archive.

Although the criteria offer a specific interpretation of the survey results, the objects selected for the first exhibition present a novel combination of materials and, hence, new knowledge. Themes that emerged from the results indicate Gilles' better known designs from Holland and recognizable objects from his time at Carleton, especially in terms of form organization. Table 3 provides these results, with fifteen objects being selected for the first

exhibition. Although a matter of interpretation, the selection of objects do respond to the initial research questions about who Gilles was, why he came to Carleton and the outcome.

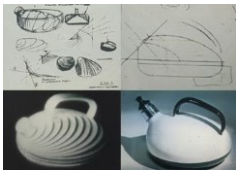
1. 
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Table 3. Results of the first survey left 15 objects for the first exhibition.

There was also an opportunity to offer comments for each object, but it was observed that only a few of the respondents from the first iteration of surveys did so. However, some of these were still useful in terms of providing a context for the materials, and comparing the accuracy of information surrounding Gilles' career. They were used as additional text for labels in the second exhibition in conjunction with Gilles' own text.

4.3.2 Discussion and Implications – Survey 1

Ideally, the first survey would have taken place with people viewing the objects in person, but space, time and availability limited that possibility. In total, seven participants completed the survey that would inform the selection of materials for the first exhibition, with five of these participants having been interviewed, and three of the participants as Gilles' former students. Six of the participants were male, and all of the participants were over 50 years of age. The surveys were anonymous and the participants were not offered any compensation for their participation.

Although presenting the first survey online had some advantages in terms of availability, there is always the question of how the experience was interpreted by the participant. The quality of the images relied on the existing documentation, and the allowable dimensions of the survey format. The objects were grouped according to their similarities, such as with the three telephone models, but other than that, there was no indication of chronology or purpose of the objects in hopes they would appear as neutral as possible. Some of the images, such as with the gas burner and form development models, almost appeared as abstract forms.

The researcher relied on the participants' knowledge of Gilles' career and design in general. The survey questions were not randomized, so each participant saw the same survey. Aside from their own biases towards certain objects, mediums, or Gilles' practice, the results do present relevant and consistent information in terms of the research questions, as can be seen with the recognizable quality of the resulting objects attesting to who Gilles was. The best example of such results can be seen with the DRU kettle, an object often associated with Gilles and his interest in form organization. However, results based on the popularity of the objects

may not address areas of research that have been obscured, and the limits of the archive also create limits on the knowledge presented through the exhibitions. So, arguing for further research into areas of Canadian design history while using popularity as a basis for exploration may be self-defeating, no matter how democratic it is.[35]

4.3.3 Themes and New Knowledge – Survey 2

The second survey also provided quantitative results in terms of the Likert scale, and allowed for qualitative feedback from the comments made. Once again, the results of the Likert scale determined that six objects would be displayed in the second exhibition, shown in Table 4. Eight questions were added to the second survey to gather further information about the effectiveness of the exhibition to share knowledge, the importance of Gilles to contemporary design and education, and student knowledge and opinions of SID. The full question responses are shown in Appendix N and summarized below.

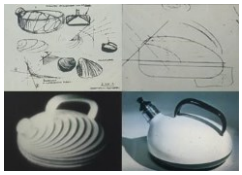
1. 
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Table 4. Results of the second survey left 6 objects for the second exhibition.

[35] Giard describes how knowledge about design in Canada is limited due to the size of the publishing market, and even though it is larger in the United States, books about design in both markets tend to show compelling photographs of products, but with very little depth of information or analysis (personal communication, April 16, 2018).

1. The first question asked participants about their knowledge of Gilles before viewing the exhibition, and the majority agreed that they knew little.
2. Responses to the second question about what students learned from the exhibition indicated that they all learned something different, which is interesting in terms of the research questions, but the value of such an exhibition as well. Also, it negated the fears that the researcher had about groups participating in the survey and providing similar responses through shared information.
3. For the third question, most of the students agreed about having some sort of display about Gilles at SID, but responses varied in terms of its permanence.
4. Less than half the students felt there should be an exhibition at a national institution about Gilles for the fourth question.
5. For the fifth question, the majority of students agreed that Gilles was still relevant to contemporary industrial design.
6. A majority also agreed that a book should be written about Gilles. However, one student had some uncertainty about further research based merely on what was displayed.
7. Most students responded that they did learn about SID from the display for the seventh question.
8. Most students provided worthwhile insights for the eighth question about describing SID, even at a relatively early stage in their education.

For the second survey, it is more difficult to consider whether the results respond to the research questions, given the level of knowledge participants may have about Gilles, his involvement with Carleton and the outcome. Instead, the quotes from the interviews presented

through the first exhibition did allow students to provide responses on the survey related to the research questions.

4.3.4 Discussion and Implications – Survey 2

Fortunately, the second survey allowed for viewing the objects in person. Fourteen participants completed the survey that informed the selection of materials for the second exhibition. It was assumed that none of the participants would have knowledge of Gilles, although one of the students happened to be a Dutch exchange student who did have prior knowledge. Eight of the participants self-identified as female, and all participants were between the ages of 18-24, with twelve in the second year of the program and two in the third year of the program. The surveys were anonymous and the participants were offered eight dollars cash as compensation for their participation.

For the first stage of the exhibition, information from the interviews and the survey have been interpreted by the researcher. As a result, the accuracy of the information about Gilles that was presented to the students through the display is potentially less reliable. Also, in looking at some of the student responses to the questions on their surveys, the students have made interpretations of their own, which, although may not be wholly accurate, can be considered new knowledge.

There are also some inconsistencies in the responses where two of the respondents said they did not learn much about the school from the exhibition, but were able to respond to other questions. Perhaps these statements reflect how much could be learned from the exhibition

relative to how much information can be presented and how much time viewers are willing to spend with the materials. On a similar note, the images of the DRU kettle did not present enough context for at least one student to understand it was a redesign, and not an entirely original product. Another student mentioned how the Likert scale should have used low numbers to represent the most positive response, which he initially recorded in reverse order. In response to the survey question about whether a book should be written about Gilles, a student was unsure based on what was learned from the display. As such, it is worth thinking about the degree to which the students are responding to the format of the exhibition and survey, rather than the content itself.

At the very least, the original research questions about who Gilles was, why he came to Carleton and the results are addressed, and some level of engagement with the exhibition was met. Even if the exhibition only served as an introduction to Gilles, the students could then continue to learn more on their own.[36]

4.4 Exhibition Design Exercise

Overhill describes exhibition design in terms of McLuhan's influence of figure/ground relationships on communications, in that changing the background alters the meaning of the figure (personal correspondence, July 7, 2018). So, as with the interviews, the exhibitions also allowed a lot of room for interpretation. The availability of the objects presented the main challenge to gathering feedback in the first survey and iterating the first exhibition. The online survey offered a compromise, which had limitations, and the question remains as to how it could

[36] Exhibitions at museums may present basic information as the audience tends to be very broad.

have been different if people were able to review the objects in person as opposed to virtually. Similarly, both exhibitions and the way they were perceived were affected by the space they were in and the time they were displayed, especially given the availability of students. The exhibitions also faced challenges in terms of gathering feedback when it seemed like no one would participate. While the situation was resolved for both cases, a different set of participants, or simply more participants, could have produced different results. So, in no way are the findings definitive, but they did offer the means to address the research questions by iterating two exhibitions.

4.4.1 Themes and New Knowledge - Exhibition 1

In the first iteration of designing the exhibition, five of the interview candidates plus two other participants affiliated with Gilles and SID provided feedback on the archive materials through an online form. The results of the feedback resulted in the choice of objects for the first display. The exhibition consisted of 15 objects or photos of objects selected on the basis of the Likert scale feedback from the first survey. These materials were arranged chronologically within the three display cases in the Azrieli Pavilion so that Gilles' design work in Holland appeared in the first case on the left. The other two display cases presented work that was undertaken at Carleton and the Centre for Industrial Design Research between the late 1970s and the early 1990s. Interview quotes from all eight interviews were displayed on text panels to offer information related to the research questions (Figure 15-18).

4.3.2 Discussion and Implications – Exhibition 1

As with the interviews, developing the exhibition from the results of the surveys allowed for a certain amount of interpretation. However, observations could be made in terms of what objects got better scores on the Likert scale. Rather than developing the exhibition on the basis of a curatorial thesis overseen by one or more curators,[37] [38] the exhibition presented knowledge about Gilles from people typically outside of the curatorial aspect of the project. That solution is akin to Latour's democratic approach of re-investing objects with meaning and even Gilles' approach to tailoring a system to solve a problem, rather than simply imposing one.[39]

[37] Hooper-Greenhill (2003) outlines the rigid division between visitors to a museum collection, the limited access to its objects, and the curatorial staff who maintain control over their meaning (p.7).
[38] Hooper-Greenhill (2000) describes the shift in late twentieth century museum culture from one of "pedagogy as transmission" to "pedagogy as culture", where communication is seen as part of culture in the latter (p. 125), and is relevant to designing the exhibitions from Gilles' archive.
[39] De Winter and Singer both described Gilles' approach to making a system that solves the problems, rather than imposing a system on the problems.

Figure 15-18. Exhibition 1 - fourth floor of Azrieli Pavilion.

4.4.3 Themes and New Knowledge - Exhibition 2

In the second iteration of designing the exhibition, undergraduate Industrial Design students at Carleton University provided feedback on the first iteration to determine what would be shown. Once again, the surveys also provided the opportunity for participants to offer qualitative feedback, but that information was not presented in the second exhibition.

The result of the second survey was developed into an exhibition in the Discovery Centre at Carleton University's MacOdrum Library. The display space consisted of a single cabinet built into the wall measuring 721.86 cm long x 47.3 cm wide x 54.61 cm high. There were ten 21.59

cm x 27.94 cm photos in the initial display related to five objects, and four of the six objects selected for the second exhibition were initially presented as photos for the display in Azrieli Pavilion. Given the smaller size of the photos from the first display, larger 60.96 cm wide x 45.72 cm high images were printed for the exhibit in the Discovery Centre, mainly to accommodate the different dimensions of that space. The two objects selected from the first exhibition were reproduced from 3D scans using a 3D printer at the Discovery Centre so that the originals could remain in the first exhibition, but also to represent how knowledge has been transferred and transformed (Figure 19-27).

The six objects that were selected for the second exhibition included the DRU kettle, the coal stove, the gas burner, the microcomputer, the blender form development model and the skate form development model. Survey feedback from the first exhibition showed that the students appreciated the aesthetics of some of the objects, such as colour choice. In other cases, the presentation of the process for designing the object was appealing, such as with the kettle. However, it was difficult to interpret overarching themes based on the qualitative data from the second survey.

Overall, Likert scale feedback about the objects was not too varied. Four objects showing significantly lower amounts of interest included the Confetti Bowl, one of the telephone models, a rough CNC form model for a jock strap, and the actual jock strap that the CNC form model was based on. Some comments suggested that these objects were not very pleasing aesthetically, and gender did not seem to be a factor, even though 8 of the 14 survey participants were female. Similarly, objects that might have no relevance to current SID students, such as the coal stove,

may have been interesting due to the way they were photographed. It was assumed that the first survey, taken by people with more design experience and knowledge of Gilles would be influenced less by the quality or presentation of images of the objects. However, that same assumption likely did not apply to participants in the second survey, where images of the skate form organization model received less interest than the actual skate form organization model.

Once again, the materials were presented chronologically from left to right against the back of the display case, starting with projects Gilles had developed in the 1950s up until the 1990s. Smaller photos of objects and materials from a variety of archives, including the one at Carleton, were displayed amongst the interview quotes on the bottom of the display case. A copy of Gilles' *Form Organization* text offered further information about the skate model. The researcher took greater license with the second exhibition as there were fewer materials to present and less concern about skewing the feedback from the first exhibition. In addition to presenting the results of the second survey, it also showed how the archive had been explored and expanded upon, visually representing Latour's process.

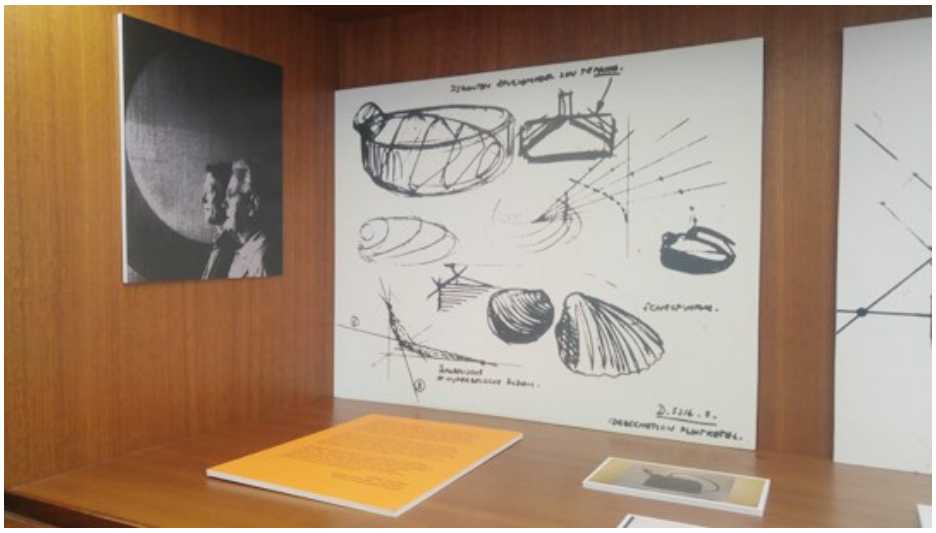
4.4.4 Discussion and Implications – Exhibition 2

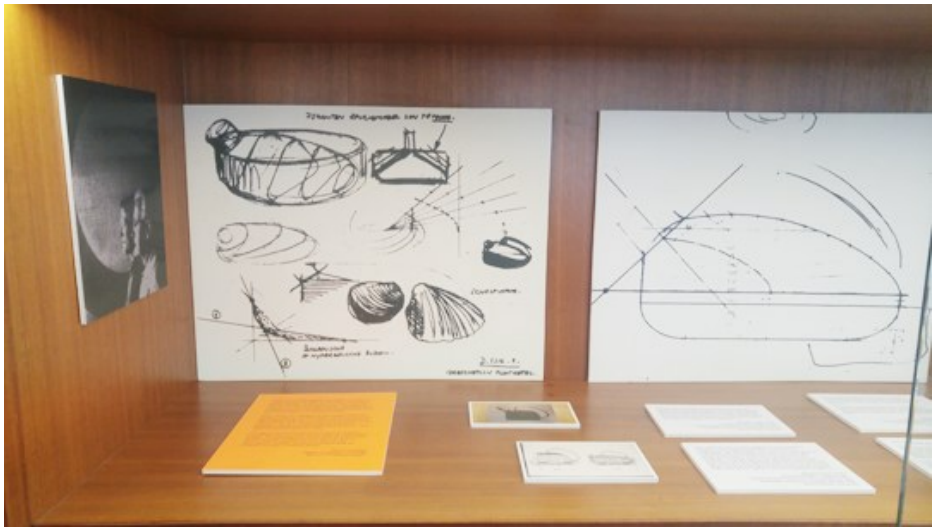
The second exhibition included a reduction in the number of objects from the first exhibition. However, as a conclusion to the research project, it also included the interview quotes and feedback from the first survey as explanatory text on the object labels. A text panel also introduced the project to viewers and the supplementary photos of objects expanded the notion of the archive and impossibility of having complete knowledge. The reproduction of objects from the first exhibition allowed those objects to remain in place in the Azrieli Pavilion display. But,

as mentioned earlier, it also gave them a symbolic meaning, representing how the knowledge of the materials from the archive had been transported, transformed, and presented to a new audience by virtue of Latour's methods.

Despite being a smaller or more refined selection of materials, including the interview quotes still provided information related to the research questions. The supplementary photos also made viewers aware of Gilles' lengthy and diverse career, and set up a dialogue with the larger photos, helping to establish their context and arouse curiousity about their significance in terms of Latour as matters of concern. Although it was decided to conclude the project with the second exhibition, largely due to the thesis timeline, the feedback from the second survey and the opportunity to gather more feedback from the second exhibition provide possibilities for the project to continue. How that might happen remains to be seen, as the exhibition in the Discovery Centre will be up until January 2019. The researcher also included QR codes with the exhibit, but only for viewers to give feedback about the Discovery Centre (Appendix O). However, even in looking at the iteration of the second exhibition, while some aspects of the project may have been reduced, such as the amount of material originally selected from the archive, other parts were expanded. Future iterations of the project could explore certain attributes of the materials more specifically, with slight variations on the original research questions, magnifying the level of detail provided by survey responses. Hence, further exhibition iterations would not necessarily continue to reduce the amount of materials from the original exhibition until there was nothing left to display. If anything, the exhibition iterations could conclude when the research questions have been adequately addressed, but ultimately the project

should remain open and fluid, as with Latour's matters of concern, and engage the iterative process as fully as possible rather than attempt to arrive at a final product.





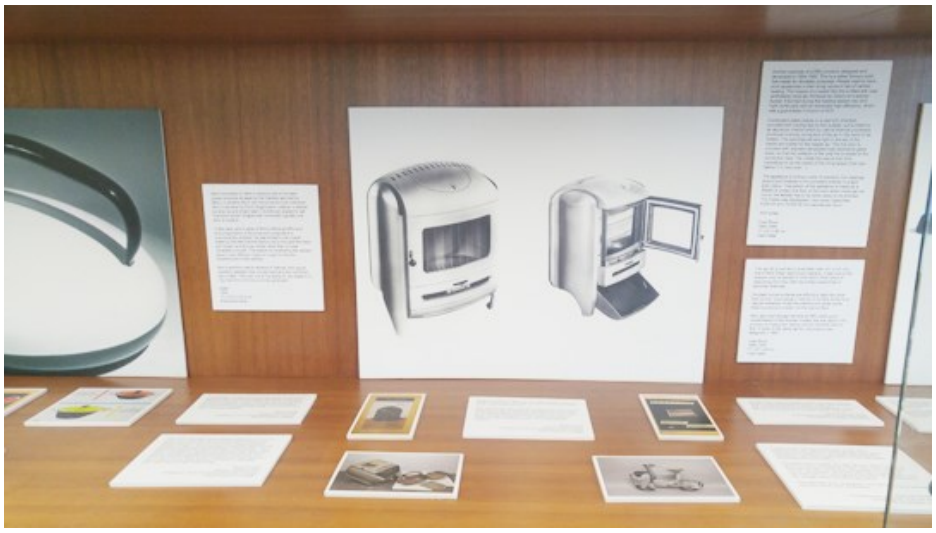


Figure 19-27. Exhibition 2 - Discovery Centre.

Chapter 5. Conclusion

For all the problems that design can purportedly address, design awareness may be one of its greater challenges. To develop design awareness requires design education, and design education requires design history. To develop design history in Canada, the difficulty is to take stock of what we have done, what we are doing, and consider what we will do. As noted by Rashid (2004), Canada has a reputation for looking beyond its borders for innovation, neglecting what is happening here (p. v). The geography and smaller market size may be limiting, but those attributes should not allow neglect to continue shaping our present and future.

5.1 Conclusion

It has been worthwhile to address the initial research questions of who was Wim Gilles, why he come to Carleton, and what was the outcome. In addition, applying exhibition design through Latour's methodology was certainly effective given the unique situation to which it was applied. In concert, these lines of inquiry are highly effective and relevant to establishing design history, and hence, design culture in Canada.

5.1.1 Interviews

The interviews provided a lot of new information, not only in terms of Gilles, but also SID, and design in general. It was extremely rewarding speaking with participants about their interactions with Gilles, but also their own experiences with education and design that took place on an international basis across various time periods. That level of experience may be difficult to communicate through the research project, but it is worthwhile in terms of recognizing Gilles' network.

In terms of the questions, Gilles' identity as a designer, educator and very generous and willful person has been established through the interviews. The reasons as to why he came to Canada are numerous and clear. Several interview participants indicated that a joint effort between Carleton University and the federal or provincial government led to the development of SID and a Bachelor's of Industrial Design program. Archival material later located at Museum Boijmans Van Beuningen and Carleton University corroborated these testimonies. Gilles' notable accomplishments in addition to founding SID include:

- active participation in work and education that led to the establishment of industrial design in Holland
- establishing the Centre for Industrial Design Research at Carleton University
- developing Form Organization over decades into a published book and software program
- developing Delta knowledge and design processes specific to design
- writing and advocating about design and design education
- partnerships with Canadian industry
- connections with the broader design community on an international basis

Aside from SID, the outcome of Gilles being in Canada certainly includes the students he engaged with over nearly twenty years of teaching. A greater awareness of SID and its educational role is relevant to the importance of Canadian design history that focuses on educators, of which Gilles' legacy is a part.

Given the amount of interpretation involved in the interview process and time that had elapsed since Gilles came to Canada, the interviews and conversations with people did not necessarily provide definitive answers to the research questions. However, they provided important leads to help locate corroborative information. For instance, correspondence made available by curator Mienke Simon Thomas at the Museum Boijmans Van Beuningen offered details about Gilles' role as a consultant to SID that gradually developed into the director's position (Appendix A). Speaking with Glen Milne, an architecture professor present at Carleton in the early 1970s, he indicated that Carleton played a large part in initiating a proposal for an Industrial Design program, that it was not simply a government effort (G. Milne, personal communication, August 23, 2018).

These details helped identify Gilles' archives at Carleton and the school's own archives as places to locate further information about why Gilles came to Carleton. In recently reviewing the documents in Gilles' archives at Carleton, his own study from 1979 for a graduate program in Industrial Design detailed the specific organizations involved and justifications for establishing SID at the university (Appendix P). Knowing that Gilles described SID as "Carleton's initiative", it was reasonable to consider that few organizations other than the university would have further information about its founding. A suggestion from Lloyd Keane, Archives and Rare Book Coordinator for the MacOdrum Library's Archives and Research Collections, led to contacting Amanda Hodge, Corporate Archivist for Carleton University, who located the original proposal for Industrial Design from Doug Shadbolt in 1972 (Appendix B). The report shows Gilles' involvement, including preceding ties to Design Canada, his invitation as a consultant candidate, and final appointment as the consultant to develop the program.

5.1.2 Surveys

The surveys also provided new information in terms of learning about the various materials in the archive. Although the researcher had interacted with the materials as a teaching assistant to verify their condition, the research process brought a greater appreciation for what they were and how they were made. The responses from the first survey with Gilles' former colleagues, friends and students gave the objects further context, which was applied to the exhibition design exercise. The second set of surveys also provided feedback from the students about the importance of Gilles' legacy and their interests in contemporary design, informing potential future research efforts.

5.1.3 Research Questions

The following conclusions have been reached in light of the original research questions of who was Wim Gilles, why he came to Carleton, and the outcome. Gilles was an internationally recognized designer and educator. Although his training in design was not straightforward, his determination allowed him to become part of a new field, and make impressive contributions to it. Colleagues that were interviewed for the project echoed thoughts similar to Crouwel, who spoke highly of Gilles as being a "trailblazer" of a designer, but recognized his sense of humility, pragmatism, and dedication to design professionalization and education (te Duitts, p. 11, 2003).

The question of why Gilles came to Carleton has been definitively answered. The response to how an internationally known designer and educator from Holland arrived in Canada is simply that he was invited. The process of arriving at that conclusion was informative in many other ways about design and design education, and the time given to the research project by the

interview participants is invaluable. However, the preconditions to Gilles' invitation offer further opportunities for research, especially due to the lack of information available about Canadian design history and education. Specifically, why Carleton invited the candidates that they did may be found in the original proposal or through input from other contributors to the document and initiative. However, the passing of time may be a limiting factor in that research.

The outcome of Gilles' arrival in Canada and subsequent founding of SID is slightly more difficult to summarize. Perhaps the most straightforward conclusion that can be drawn is to look at Carleton's program not simply as one of the few Bachelors of Industrial Design available in Canada, but as having stronger ties to engineering rather than fine arts. For Gilles, that distinction of design being systematic and measured can be seen in many aspects of his work as a designer, thinker, and educator.[40] Interview participants also recognized SID's distinctiveness, and that is probably the most singular and long-lived result of Gilles' involvement with Carleton, which endures after nearly fifty years.

The application of methodologies from Sanders and Latour through exhibition design and its effectiveness in responding to the initial research questions can be addressed by the following. It offered a novel means for evoking the concerns attached to the materials in the archive, and for gathering information through primary research and disseminating it through the exhibitions. Employing such a method may not seem different than more straightforward approaches to historical research using archives, interviews and even exhibitions. However, the engagement of

[40] Bruce Sterling incorporated Gilles' method for analyzing products into chapter 16 of his 2005 book *Shaping Things*.

certain publics, namely Gilles' colleagues and a new generation of design students, gives it a heightened relevance for developing design history and culture. In enlarging the scope of the project, further publics could be drawn in, and the archive could be expanded.

5.1.4 Limitations

Limitations to the research in terms of the time elapsed since Gilles came to Canada have been mentioned. Time was also a huge determining factor during the project for how much feedback could be provided and how that affected subsequent research efforts. Given the nature of the exhibition design process, availability of space also had an impact on how the research developed. Although getting people to participate in interviews did not present a challenge, having people participate in the survey was quite difficult. Considerations for improving that method include having the actual objects available for feedback, revising the survey document and more actively involving the participants through collective creativity and participatory design.

Other limitations include the researcher's own lack of understanding of the Dutch and French languages, which would have allowed accessing further resources outlining Gilles' background. Similarly, having more training in history or education could have allowed the researcher to further explore and contextualize certain areas of Gilles' career. However, it is worthwhile noting that despite these limitations, and due to the kindness of those involved with the project and a certain amount of good fortune, many of the limitations positively helped influence its final form.

The main limitation to any of the methods involved and the eventual outcome is a lack of enthusiasm or indifference. Design history in Canada may not be as well publicized as design history in countries such as the United States. That tendency may reflect the lack of attention Canadian design initially received, and then the stature of the exhibitions or institutions that celebrate or promote such achievements. However, that was part of the project's goal, to understand Gilles' place within Canadian design history.

5.1.5 Opportunities for Future Study

Opportunities for future study may also be limited, but not necessarily. For instance, having a background in education or history might allow for the development of resources for the history of design and design education in Canada. There are certainly other designers and design educators who remain obscure, at least to current generations of students. The process of using exhibition design to develop such research is certainly intriguing, and does not have to be limited to design history. It would be interesting to see how far a project could go, or in what direction, if it were taken beyond two iterations. Also, data could be revisited or reintroduced to the project. As mentioned by Andrews (2013) in terms of using interviews for narrative research, the perspective of the research is never static, so neither is the data (p. 206). Thus, it is important to return to the data, to consider possible alternative interpretations. Using an exhibition design approach with more contentious or delicate subject past events could prove beneficial, particularly as groups work through the past to arrive at a better future. Efforts at reconciling Canada's colonial history with its present may be one such opportunity.[41]

[41] Canada's Truth and Reconciliation Commission concluded in June 2015, and encouraged the Canadian Museum for Human Rights to promote the meaning of reconciliation through exhibitions, which started in August 2015.

The research project contributes to Canadian design history and the related history of design education. It also contributes to the way knowledge is created and displayed through an exhibition. In particular, the interaction between archives and exhibitions can build on one another, as seen with the second exhibition. The extent of the impact may be difficult to gauge except by experienced designers or design educators. Design historians would be excellent candidates to evaluate the value of the project and help contextualize it with other methods. Given its newness relative to the field of design, the importance of design history in helping to develop design-specific knowledge and practices cannot be understated.[42] However, in developing a design culture, the general public is probably the best audience to simply be inspired by the possibilities made present by exhibitions based on the archive, and how design affects their daily lives. The iterative approach to developing the exhibitions and new knowledge generated helps ensure that it is not an exclusive or finite process.

5.1.6 Recommendations

The following recommendations have resulted from the research project.

- Design history is immensely valuable in determining what has already been done, especially when it comes to innovation. Greater attention should be paid to Canadian design history to help ensure a comprehensive education of design students and the public, competitiveness and to make more of domestic resources.
- Delta knowledge should be mapped in relation to design thinking so that its significance can be properly contextualized and understood, as well as form organization's relevance to the development of CAD software.

[42] A 2015 issue of RACAR, revue d'art canadienne/Canadian Art Review was dedicated to design-related topics, however, a separation between art and design may impede any progress.

- Imbalances in gender became apparent through the research project. Given design's proximity to Engineering, and its importance to society as a whole, the lack of attention given to women designers must be addressed.
- Gilles' arrival in Canada was possibly brought about by a lack of Canadian designers able to establish the design program and serve as its first director. Perhaps that would be a different situation today, with more Canadian designers having been trained since Gilles' arrival. However, globalization and teamwork have become a more apparent aspect of design. Rather than focus solely on domestic resources, international partnerships and exchanges should also be encouraged to take advantage of this reality, which is equally important as training in the latest technology.

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Glossary

abductive thinking –when finding the solution for a requirement based on inference that will serve a similar purpose, but is not verified. Differs from deductive reasoning, which moves from the general to a specific conclusion based on evidence, and inductive reasoning, which moves from specific evidence to a general conclusion that may only be probable.

bisociation - the combination of previously disparate ideas.

collective creativity - bisociation, the combination of previously disparate ideas, shared by two or more people

delta knowledge – a form of knowledge emphasizing planning and future consequences. coming from the particular, local, timely and the oral while relying on a methodology of heuristics and an emphasis on applied knowledge, or acquiring knowledge through the act of doing; "know-how" rather than "know-that". Delta knowledge acquires new knowledge by doing, offering an opportunity for "reflection in action", rather than just recounting events or outlining concepts.

design ethnography – design method involving a comprehensive and empathic understanding of the user, including their lives, language and the context of their artifacts and behaviours. The method offers qualitative data and provides a comprehensive view of users from reviewing patterns or themes that emerge from research materials.

design thinking – knowledge, strategies, processes and concepts specific to design.

dingpolitik - term used to describe realist and representative views of power relations, where politics takes into account people and their associated issues, objects become known by the concerns attached to them rather than facts and assemblies can take new forms for a public absent from politics.

directed storytelling - directed storytelling is a social science method of narrative inquiry, lending itself to the interview process. It allows designers to conduct research on an experience and quickly reveal patterns from other people.

evaluative research - can take the form of a survey using feedback from users of a product or service to keep refining it and gathering data through each iteration.

form organization - a mathematical method for design developed by Wim Gilles for generating organic forms so they may be reproduced by a machine by relying on sections or slices to gradually build up changes in shapes.

narrative research process – a qualitative frameworks without rules about what are suitable materials or methods of investigation, providing the opportunity to see different and sometimes opposing meanings, to compare them with one another and to learn about individual or social changes. Ideally, both the researcher and the subject's involvement is apparent and constructed collaboratively.

object-oriented democracy - investing, or re-investing objects with meaning while emphasizing representation and reflection on that act as an alternative to viewing public matters from a political point of view, but rather the patterns of emotion, disruptions, agreements and disagreements between objects or issues. An object-oriented democracy attempts to bring together two meanings of representation, to gather-people and to present or represent an object of concern to those who have been assembled.

participatory design - a subset of collective creativity that has already become widely used in design. Also known as co-design, it is distinguished as “designing with the users”, while user-centred design is defined as “designing for the users.

presence of products – the sensory qualities of a product, including visual, tactile, weight, acoustic, smell, taste, and durational experience, often considered in relation to its qualities of use in terms of harmony or conflict.

probes – objects or materials that invite users to reflect and offer information about their experiences to provide inspiration to designers.

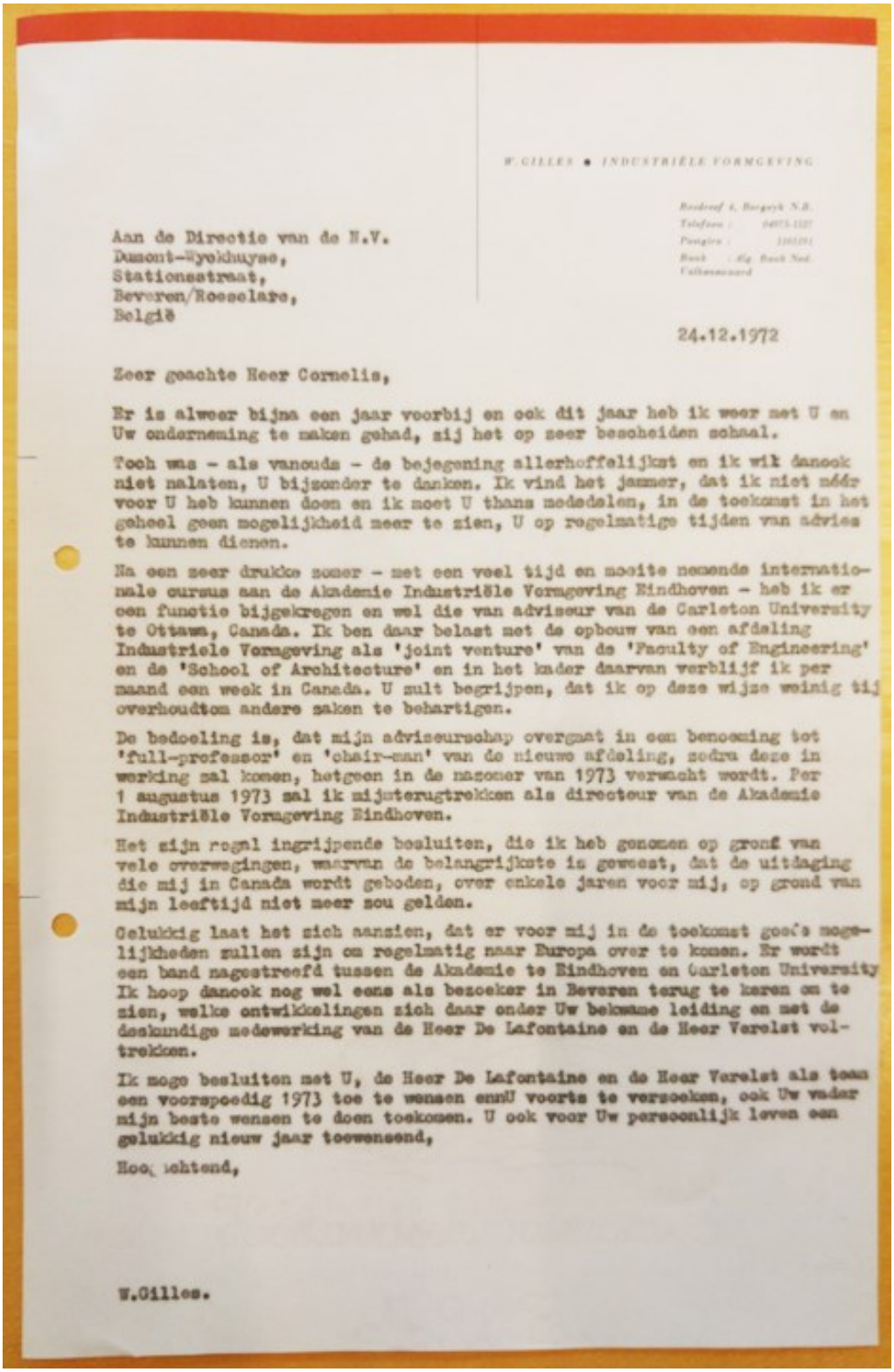
reflection-in-action – attention to what one is doing while one is doing it.

research through design - design activities that help create knowledge allowing a complex problem to become understood by iterating prototypes about it.

technical rationality – a self-reinforcing state where people get thoroughly entrenched in their own professional area without any practical knowledge due to their presumed mastery of a given subject.

Appendices

Appendix A – Letter from Wim Gilles to Hugo Cornelis



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Culemborgwaard

Aan de Directie van de N.V.
Dumont-Wyckhuyse,
Stationsstraat,
Beveren/Roeselare,
België

24.12.1972

Zeer geachte Heer Cornelis,

Er is alweer bijna een jaar voorbij en ook dit jaar heb ik weer met U en Uw onderneming te maken gehad, zij het op zeer bescheiden schaal.

Toch was – als vanouds – de bejegening allerhoffelijkst en ik wil danook niet nalaten, U bijzonder te danken. Ik vind het jammer, dat ik niet méér voor U heb kunnen doen en ik moet U thans mededelen, in de toekomst in het geheel geen mogelijkheid meer te zien, U op regelmatige tijden van advies te kunnen dienen.

Na een zeer drukke zomer – met een veel tijd en moeite nemende internationale cursus aan de Akademie Industriële Vormgeving Eindhoven – heb ik er een functie bijgekregen en wel die van adviseur van de Carleton University te Ottawa, Canada. Ik ben daar belast met de opbouw van een afdeling Industriele Vormgeving als 'joint venture' van de 'Faculty of Engineering' en de 'School of Architecture' en in het kader daarvan verblijf ik per maand een week in Canada. U zult begrijpen, dat ik op deze wijze weinig tij overhoudtom andere zaken te behartigen.

De bedoeling is, dat mijn adviseurschap overgaat in een benoeming tot 'full-professor' en 'chair-man' van de nieuwe afdeling, zodra deze in werking zal komen, hetgeen in de najaar van 1973 verwacht wordt. Per 1 augustus 1973 zal ik mijnterugtrekken als directeur van de Akademie Industriële Vormgeving Eindhoven.

Het zijn regel ingrijpende besluiten, die ik heb genomen op grond van vele overwegingen, waarvan de belangrijkste is geweest, dat de uitdaging die mij in Canada wordt geboden, over enkele jaren voor mij, op grond van mijn leeftijd niet meer zou gelden.

Gelukkig laat het zich aanzien, dat er voor mij in de toekomst goede mogelijkheden zullen zijn om regelmatig naar Europa over te komen. Er wordt een band nagestreefd tussen de Akademie te Eindhoven en Carleton University Ik hoop danook nog wel eens als bezoeker in Beveren terug te keren om te zien, welke ontwikkelingen zich daar onder Uw bekwame leiding en met de deskundige medewerking van de Heer De Lafontaine en de Heer Verelst voltrekken.

Ik mogo besluiten met U, de Heer De Lafontaine en de Heer Verelst als team een voorspoedig 1973 toe te wensen enmU voorts te verzoeken, ook Uw vader mijn beste wensen te doen toekomen. U ook voor Uw persoonlijk leven een gelukkig nieuw jaar toewensend,

Hoo[illegible]chtend,

W.Gilles.

Appendix A – Letter from Wim Gilles to Hugo Cornelis
(translation by Google Translate)

24.12.1972

Dear Mr. Cornelis,
Almost a year has passed and this year I have had to deal with you and your company again, it is a very modest sequel.

Yet - as always - the consolation was courteous and I do not forget to thank you too. I think it's a pity that I have not been able to deal with you, and now I have to fashion you, in the future to no longer give me any modesty, to be able to advise you at regular times.

After a very busy summer - with a lot of time and effort taking international course at the Akademie Industriele Vormgeving Eindhoven - I gained a job as consultant at the Carleton University in Ottawa, Canada. I am responsible for the development of Industrial Design as a 'joint venture' of the 'Faculty of Engineering' and the 'School of Architecture' and in that context I stay a week in Canada for a week. In this way I have little time left to look after other sorts.

The intention is that my advisorship will change to an appointment as 'full professor' and 'chairman' of the new department, as soon as they come into working, which is expected in the late summer of 1973. Before August 1, 1973, I will retire as director of the Eindhoven Industrial Design Academy.

It is a rather drastic decision, which I have come up with on the basis of many considerations, the most important of which was that the challenge that I am offered in Canada would no longer apply to me in a few years' time.

Fortunately, it is obvious that there will be possibilities for me and the future to come to Europe regularly. A band is strived for between the Academy in Eindhhoven and Carleton University. I hope to return to Beveren as a visitor to see which developments take place there under Your skillful leadership and with the expert cooperation of Mr. De Lanfontaine and Mr. Verelst.

I may decide to wish you, Mr. De Lafontaine and Mr. Verelst as a team a prosperous 1973 and also to request that your father also submit my best wishes. You also wish a happy new year for your personal life,

Good morning,

W. Gilles

Appendix B – Excerpts from Industrial Design at Carleton University: A Proposal (December 1, 1972)

CHART SHOWING DESIGN INTER-RELATIONSHIPS FROM "DESIGN IN THE QUALITY CIRCUIT"

W. Gilles, International Quality Centre, Holland.

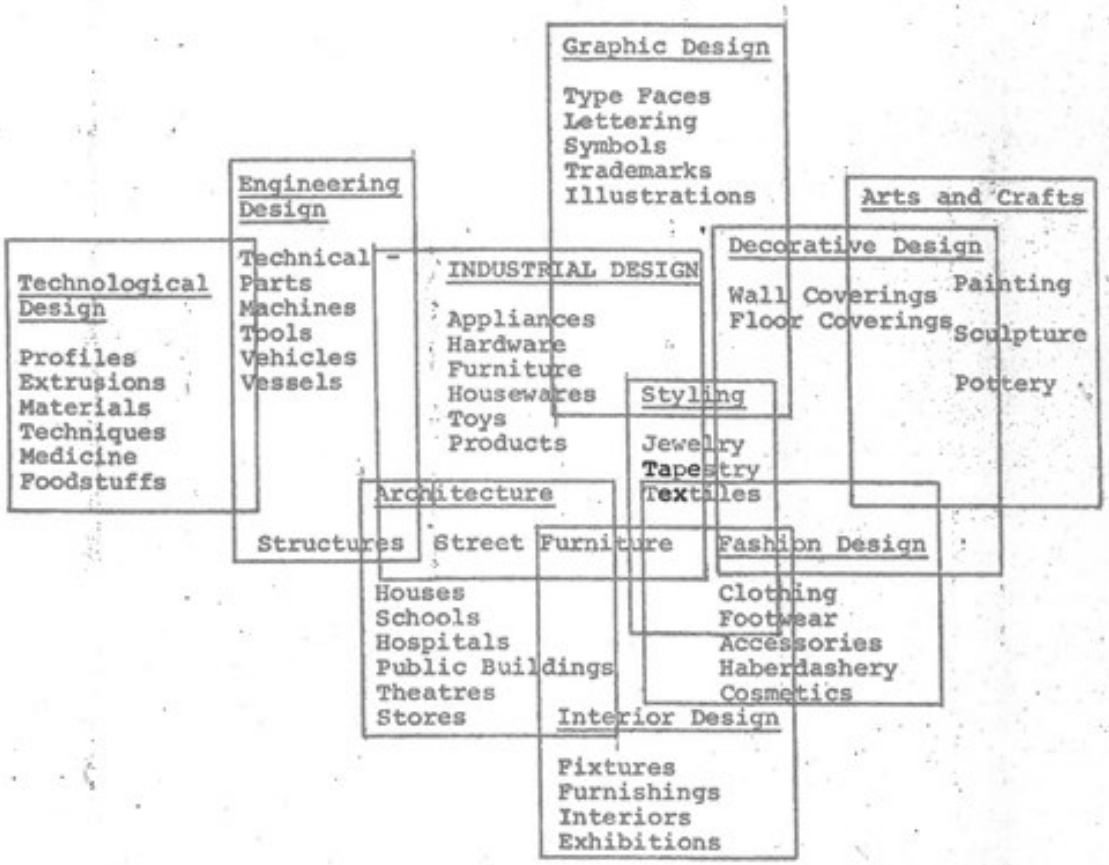


FIGURE 1

- excerpted from Design/Canada: A Preliminary Framework for Industrial Design Education.

(d) The Case for Locating the New Program at Carleton University:

In April, 1969, the Education Committee of the Association of Professional Industrial Designers of Ontario, with the assistance of the National Design Council, embarked on a study of the situation in Ontario with respect to education for industrial design, during which they entered into discussion with the universities and the colleges of applied arts and technology in Ontario, and assessed their plans and proposals for programs in this field. Their report is attached as Appendix 3 page 57.

Their key recommendation was that "Carleton University be given every opportunity, support, and administrative assistance to establish as soon as possible, within the Faculty of Engineering, the first industrial design degree course in Ontario".

The more important reason for locating at Carleton, in our view, is the fact of close collaboration between the Faculty of Engineering and the School of Architecture, and the joint-venture approach to this new program. Since the Association of Professional Industrial Designers of Ontario visit to the School in 1969, when they were impressed with this aspect of our program, considerable progress has been made in joint-venture into the building science field which should result in new course work in the near future, and still stronger linkages with a new design program.

Among the other criteria used to assess the various proposals from different universities, the Association of Professional Industrial Designers of Ontario Committee tended to downgrade the proximity to a local concentration of secondary, industry relative to other criteria. While we agree with the Committee, this judgement was questioned by Douglas Wright, Chairman, Committee on University Affairs, in an early exchange of correspondence dated in February, 1971. (See Appendix 2, page 54). In support of our position we would now argue further that:-

1. "People" are more important to an educational program than "proximity to industry".
2. Ottawa is a particularly unique "people-rich" resource area for many kinds of high-level expertise relevant to the design field.
3. Many industries deliberately separate research, design and development groups from their factory locations, recognizing the uniqueness of these activities and the greater benefits to creativity to be derived from the placement of designers in their own working environment. We see the separation of the school from the factory as having similar positive benefits.
4. "People" can be moved easily given modern transportation and communication media - this applies to moving specialists from industry or students to industry.
5. Ottawa is only 1 hour by plane, 4 hours by car, from Toronto, and 2 hours from Montreal - making it an ideal "in-between" location enjoying access to two not one major industrial centres with all cultural fringe benefits that implies.

3. 88.100 Engineering Graphics and Design - Two hours lecture and four hours laboratory, First and Second Term. (This introductory course is given to approximately 200 new students. Professor Kardos introduced an industrial design emphasis in the Second Term project design, with the assistance of Frank Dudas, of the design firm of Dudas, Kuypers, in Toronto).

   Frank Dudas and Lee Sackett were assigned to both of the Second Term courses, and gave seminars and conducted criticism sessions in each group.

   Additional work was done during the 1971-72 session to define the course patterns which would constitute the "minors " in Architecture and Engineering. These are shown in Appendix 1.

   Commencing in January, 1972, we invited a number of internationally distinguished designers and design educators to visit the University during the Second Term. These visits lasted several days during which we were able to meet informally and discuss at length problems of design education generally, curriculum design, specialization and many other issues relevant to our study. Confrontation with this wide spectrum of opinion has been extremely helpful to us in formulating the direction outlined in this proposal. A list of these consultants is as follows:-

   - Mr. Hans Neuberg, Graphic Designer, Zurich, Switzerland
   - Mr. Arthur J. Pulos, Chairman, Department of Design, Syracuse University, New York
   - Mr. Robert McKim, Chairman, Design Division, Stanford University, California
   - Mr. Willem Gilles, Director, Akademie Industriele Vormgeving Eindhoven, The Netherlands
   - Mr. Josef Mueller-Brockman, Graphic Designer and Educator, Zurich, Switzerland
   - Dr. Nathan Shapira, Professor, School of Design, University of California at L.A., and Head, Department of Design, University of Nairobi, Kenya.
   - Mr. Christopher Jones, Head, Department of Design, Open University, U.K.

In February, 1972, an Advisory Committee was formed under the Chairmanship of Dean D.A. George, to help us formulate a concrete proposal.

Meeting in March, the Advisory Committee reviewed the progress to that date as reported by the Steering Committee, and, after considerable discussion, agreed to endorse their recommendation to give top priority to the development of a four-year undergraduate degree program in Industrial Design.

In April, the Advisory Committee recommended that we proceed to advertise to find the Chairman for the eventual program in industrial design and then retain him as a consultant paid for by the grant until such time as the program is approved. His duties would include the responsibility for detailed development of the curriculum proposal during the next stages of approval, as well as for recruiting staff. The Office of Design, D.O.I.T.C. agreed to this proposal and the advertisement shown in Appendix 4 was released in May, 1972.

Professor Sharon, with the aid of student assistants over the summer months, made a good start on the library and slide collection in support of this program. Approximately 600 volumes and 300 slides have been purchased to date.

In June, 1972, as a result of earlier initiatives by Frank Dudas, and hard work by him and Professor Kardos, we hosted a week-long meeting of the Board of Directors of the International Council of Societies of Industrial Design (ICSID). During the week, a joint one-day meeting with the Association of Canadian Industrial Designers was held, during which a number of presentations were made by the ICSID Directors, and one by us of "Curriculum guidelines and structure" based on ICSID recommendations. These are included in appendices 7 and 8. We later met with ICSID Directors alone, during which meeting we received their enthusiastic endorsement of the approach we were taking, as well as a number of helpful suggestions. The contacts established with this distinguished international group will continue to be productive as we proceed to develop the program in detail.

The members of the ICSID Board of Directors who attended the meetings are:-

- Mr. Henri Vienot, President, Paris, France
- Mr. John Reid, Past President, London, England
- Mr. Carl Aubock, Vice-President, Vienna, Austria
- Mr. Edgar Kaufmann, Vice-President, New York, U.S.A.
- Mr. Rudolfo Bonetto, Milan, Italy
- Mr. Kenji Ekuan, Tokyo, Japan
- Mr. Frank Dudas, Toronto, Canada
- Mr. Jurgen Hamer, Honorary Treasurer, Stuttgart, West Germany
- Mme. Josine des Cressonnieres, Secretary-General, Brussels, Belgium

- Mr. Frank Height, London, England and
- Mr. Yoshi Nishomoto of Tokyo, Japan, both attended these meetings as observers.

In August, 1972, the first draft of the feasibility study entitled "Industrial Design at Carleton University - A Proposal - Preliminary #1" was completed and given limited circulation. This was examined and given approval in principle, subject to modification to take into account specific comments by:

(a) the Advisory Council to the School of Architecture, on August 31, 1972
(b) the Advisory Committee on the Industrial Design Program, on September 18, 1972
(c) the Curriculum Committee of the School of Architecture, on October 10, 1972
(d) the Engineering Faculty Board on October 23, 1972

In mid-October, Mr. Wim Gilles, Director of the Academy of Industrial Design in Eindhoven, the Netherlands, was appointed as Consultant to help with the final development of the program, terminating the selection process initiated by the advertisement released in May, 1972.

An ad-hoc Committee appointed by the Dean of Engineering, composed of representatives from Engineering and Architecture, met with Mr. Gilles to review the collected comments on the first draft feasibility study, and to resolve differences of opinion. The result of these meetings is

the totally revised proposal contained in this Second draft dated December 1, 1972.

Appendix C – Press Release for American Study Tour

SOCIETY OF INDUSTRIAL DESIGNERS · 48 EAST 49th STREET · NEW YORK 17 · N.Y.

FOR THURSDAY PAPERS JULY 9

Six leading Netherlands industrial designers were entertained by the New York Chapter of the Society of Industrial Designers today at the home of Russel Wright, past President of the Society. They are making a tour of American consultant and corporation design offices under the sponsorship of the Productivity and Technical Division of the Mutual Security Agency.

The six-week long tour will take them from New York to Rochester, Springfield, Mass., Bridgeport, Conn., Cleveland and Chicago.

The Netherlands team leader is Karel H. Sanders, Director of the Institute of Industrial Design, Amsterdam, and the team secretary is Reinder Blijstra, Editor of the art and design of "HET VRIJE VOLK" (newspaper). Other members of the group are Willem Gilles, Jacob Penraat, Reinier J. H. Smeets and Karel Smit.

Appendix D – Wim Gilles, International Connections

ICSID

news 4•97

Press releases from ICSID members

Wim Gilles

CANADA: Honorary Doctorate. At its June convocation, Carleton University awarded an honorary doctorate to Professor Wim Gilles, acknowledging his life-long contribution to industrial design. His design career started in the Netherlands after the Second World War. He was also instrumental in the founding of the Dutch industrial design association (KIO) and active with ICSID. Later, he became involved in industrial design education at the Academy in Eindhoven.

In 1972 he was hired by Carleton University and became the founder and first director of the School of Industrial Design. He retired in 1991 and was named Emeritus Professor of Industrial Design in 1993.

Association of Canadian Industrial Designers ACID
tel +1 514 287 65 31
fax +1 514 287 65 32

GERMANY: Design promotion bears fruit. The International "Design Innovations '97" celebrated its premiere in the new home of the Design Zentrum Nordrhein Westfalen.

More than 900 products submitted by international manufacturers and designers, all of which received the Red Dot for High or the Highest Design Quality, were exhibited. The range of works extended from ergonomically-designed workplaces through thermos flasks and digital answering machines to a blade system for ice hockey professionals.

USA: Industrial Design Excellence Awards. The 1997 awards were conferred on June 28 at the IDEA ceremonies in Washington, D.C. The 29 Gold, 48 Silver and 65 Bronze winners were selected from the largest field ever of nearly 1000 entries. Of the total, 23 went to non-American designers and companies.

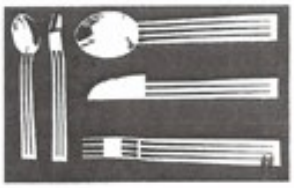
Four corporations won an unprecedented four awards each: Apple, Compaq, Steelcase and Samsung Electronics. Black&Decker and Pitney Bowes came in with three awards each. Overall, consumer product categories showed notable growth in entry number as well as quality.

The 1998 entry deadline is February 16, 1998.

Industrial Designers Society of America IDSA
tel +1 703 759 0100
fax +1 703 759 7679

Gold Award Furniture: Mateo's Crib designed by Alberto Mantilla and Anthony Baxter

ICSID press: *This page consists of press releases from ICSID members. For your press release to be included, contact Maarit Tevanlinna-Alvarez at the ICSID Secretariat. Please send photos and a*



Excellent design: Cutlery by Jitka Formánková

CZECH REPUBLIC: Good Design 1996. With the competition deadline set for January 6, 1997, the final assessment of the 142 entries took place on January 21-22, 1997.

They were divided into eleven areas of competition, each then subdivided into four categories. Twenty-five works were selected for an award. The Design Center of the Czech Republic Prize will be bestowed on 13 entries; the Excellent Design 1996 Prize will be awarded to 11 entries; and one entry will receive the National Prize for Design 1996.

Union of Visual Artists of the Czech Republic UVUCR
tel +420 54 121 35 55
fax +420 54 221 16 62

GERMANY: Renowned Braun designer retires. Dr. h.c. Dieter Rams, chief of design at Braun for forty years, retired in May of this year. During his many years of service, Dieter Rams and Braun wrote design history. Worldwide acclaim for Braun Design is reflected in the numerous international design prizes it won, as well as personal citations and honors for Dieter Rams.

This famed designer materialized a vision and accomplished an outstanding lifework, which is firmly rooted in the company's values across time and borders. Dr. Rams will remain associated with Braun as a consultant.

Braun Phoncsuper SK by Dieter Rams and Hans Gugelot

ughts

Wim + Kenfriedman on research.

COPY OF MY E-MAIL TO KEN FRIEDMAN

Date: Thu, 11 Apr 2002 16:24:09 -0400
From: Wim Gilles <wgilles@ccs.carleton.ca>
To: Ken Friedman <ken.friedman@bi.no>,
wgilles@ccs.carleton.ca
Subject: reply and more

Dear Ken,

In reply to your recent e-mail message: Of course, I shall present your request for ID students to join the PhD-Design list to students ofCarleton University's School of ID.

By the way: I am not very happy with the content of the far too many postings on the Design-PhD list. A few days ago the harvest of two days was no less than 64 messages. I find it impossible to read even half of them, let alone to react properly. The shallowness of some I have read make it hard to believe that the writers are PhD level students. For example: should we not assume that all of them know the difference between methods and methodology? Look at some of the blah blah in the endless "timeless design" thread. I agree with Chris Rust's one sentence reaction.

When do you expect the discussions on definitions and theories about theory to end? When can we begin to read about the research undertaken by Design-PhD students? I have not even seen a thesis title, let alone a report about research results.

I continue to believe that the design disciplines, and particularly that of industrial (product) design, badly need to expand their knowledge base, not in the least to serve design education at university level. During my academic tenure I enjoyed doing my share of research for that purpose and I still regret there was so little opportunity to publish at that time. I also regret that I could convince only so few of my colleagues to begin undertaking research. Jacques Giard still is the notable exception.

--

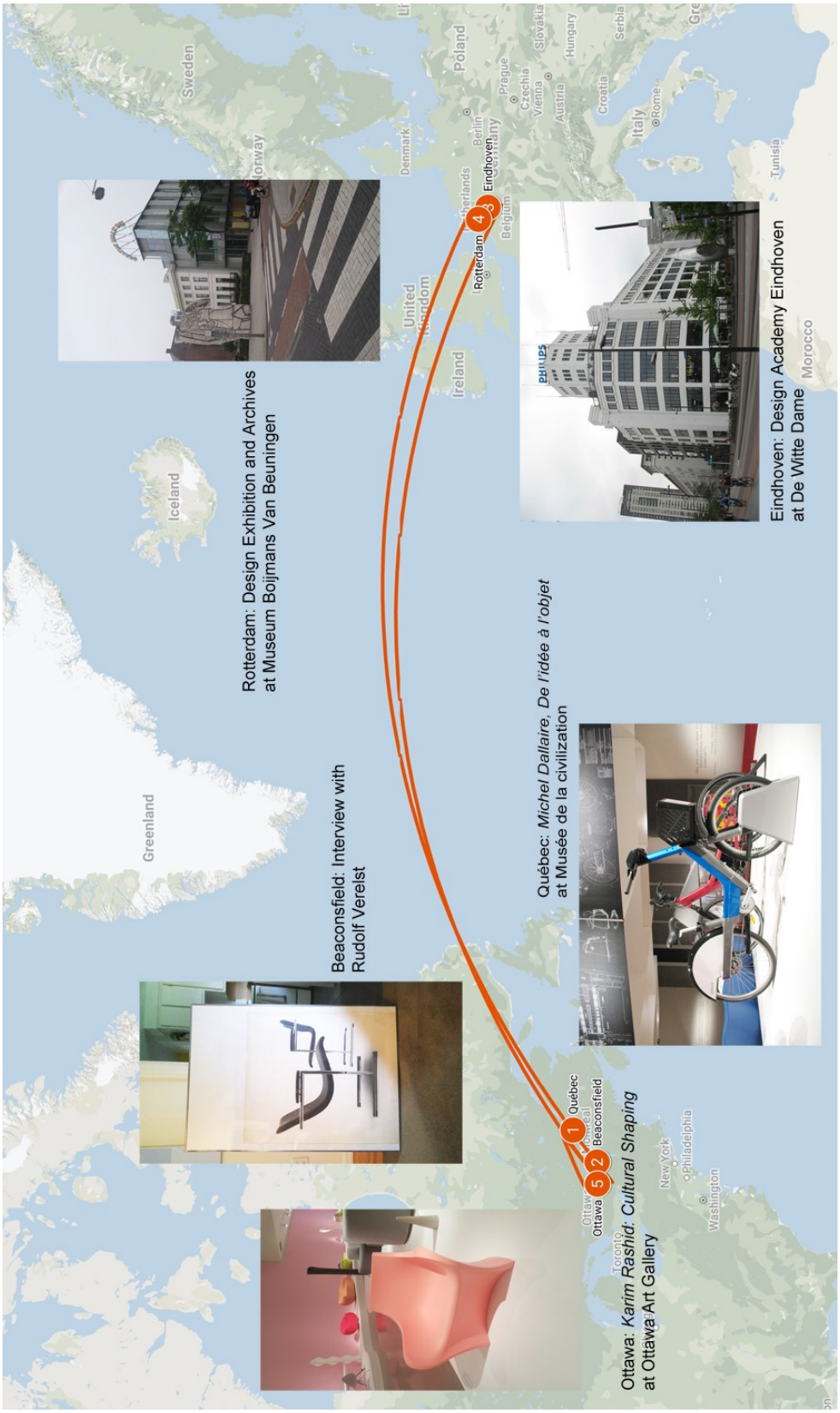
About my family life: Now that we have finally settled in our new senior's bungalow, I finished most of my handyman's projects. I can now switch to working on the new version of "The Context of Industrial Product Design." As you may know, that version, on request of Wiley & Sons in New York, will have Jim Lesko of the University of Bridgeport as a co-author. Basically to ensure that the book will better suit a US audience.

1

SEE OVERLEAF

Images of Gilles' work included in a recent group exhibition at Museum Boijmans Van Beuningen, Rotterdam.

Appendix E – Research Destinations



Appendix F – Interview Subject Biographies

Brian Burns was born in England and studied Engineering, Industrial Design, and Environmental Sustainability. He taught in Australia before coming to Ottawa where he met Wim Gilles. After teaching for a number of years, Burns became the director for Carleton's Centre for Industrial Design Research. Burns has lectured and written on design, and continues to teach with a focus on sustainability.

Martien de Leeuw emigrated from Holland at a young age and studied electronics at the Southern Alberta Institute of Technology, followed by industrial design at Carleton University and graduate studies at Syracuse University. De Leeuw worked in the private sector before returning to Ottawa, teaching at SID during the 1980s and becoming director in the late 1990s. De Leeuw's knowledge of mass production continues to inform SID curriculum.

Koen de Winter, PhD. was born in Belgium and studied ceramics at École des Métiers d'Art de Maredsous Akademie voor Industriële Vormgeving in Eindhoven and product design. He has worked with numerous companies, including Volvo, Mepalservice and Danesco. In addition to teaching at UQAM, he has established private studio practices Hippo Design and Atelier Orange with Ginette Rochon.

Jacques Giard, PhD. was born in Montréal and received his education there. After establishing his own practice, he moved to Edmonton to teach for four years. Following a guest lecture at Carleton University, he began teaching at SID and eventually became the second director of the

program. In the late 1990s, he moved to Arizona State University to serve as director for the School of Design where he is still actively involved in design education.

Heidi Overhill, PhD. (ABD) graduated from SID in the late 1970s and she went on to attend graduate studies at the Royal College of Art in England before working in Italy. She has taught at the Ontario College of Art and Design University, published on numerous design topics and is currently a professor at Sheridan College where she teaches design history and studio practice. Her PhD considers the Western domestic kitchen as a place of 'information'.

Gilles Paquet, PhD. taught Economics at Carleton University for almost two decades and was also Dean of the Faculty of Graduate Studies. In 1981, he became Dean of the Faculty of Administration at the University of Ottawa until 1988, and in 1997, became the Founding Director of the Centre on Gouvernance. Paquet has also been active as a journalist for CBC, and has published more than 60 books and 500 reports.

Georges-Frédéric Singer, PhD. has studied numerous subjects, including Communication Arts, Environmental Studies, and Media Studies, completing a PhD. in Art Education at Concordia University. Singer has taught graphic design, industrial design, Fine Arts and communications, and lectured at SID from the late 1970s until the late 1980s. In 1991, he founded the Multimedia Technologies Experimentation and Development Centre (ECHO) at UQAM, serving as director.

Rudolf Verelst was born in Belgium and studied architecture at the National Higher Institute for Architecture in Antwerp, and industrial design in Eindhoven. He taught at the Academie in Mol, Academy of St-Niklaas, and the Higher Institute for Art and Culture Development in Burssels,

and UQAM. He worked in Holland on numerous projects, including furniture design for Novalux and with Wim Gilles for Dumont-Wyckhuyse.

Appendix G – Interview Letter of Invitation

Carleton UNIVERSITY
Canada's Capital University

Letter of Invitation: Interview

Title: The Engineering and Aesthetics of Wim Gilles

Funding Source:

Date of ethics clearance: 22 March 2018

Ethics Clearance for the Collection of Data Expires: 31 March 2019

26 March 2018

Dear Sir or Madam,

My name is Alisdair MacRae and I am a Master's student in the School of Industrial Design at Carleton University. I am working on a research project under the supervision of Professor Bjarki Hallgrimsson.

I am writing to you today to invite you to participate in a study on Wim Gilles. This study aims to address the career of Gilles, his role in the founding of the School of Industrial Design at Carleton University, and the outcome.

This study involves one 60-minute interview that will take place in a mutually convenient, safe location. With your consent, interviews will be audio-recorded. Once the recording has been transcribed, the audio-recording will be destroyed.

Please note that anonymity is not promised and would be contrary to the goal of this work. Since you are a public figure in this area, I do not expect you to share information that would be embarrassing to you personally or of risk to you professionally. However, you will have the option to review the thesis prior to its defense, to redact/modify statements if needed, or withdraw from the project entirely before the withdrawal deadline: 31 May

2018. You can withdraw by phoning or emailing the researcher or the research supervisor. If you withdraw from the study, all information you have provided will be immediately destroyed.

As a token of appreciation, I will credit your contribution to the project in the text of my thesis. No other compensation will be provided.

All research data, including audio-recordings and any notes will be encrypted. Any hard copies of data (including any handwritten notes or USB keys) will be kept in a locked cabinet. Research data will only be accessible by the researcher and the research supervisor.

This ethics protocol for this project was reviewed by the Carleton University Research Ethics Board, which provided clearance to carry out the research. If you have any ethical concerns with the study, please contact Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

CUREB-B: CUREB-B Clearance #108537

I have attached the consent form and list of questions for your review. If you would like to participate in this research project, or have any questions, please contact me at alisdairmacrae@cmail.carleton.ca.

Sincerely,

Alisdair MacRae

Appendix H – Interview Consent Form

Carleton UNIVERSITY

Canada's Capital University

Consent Form

Title: The Engineering and Aesthetics of Wim Gilles

Date of ethics clearance: 22 March 2018

Ethics Clearance for the Collection of Data Expires: 31 March 2019

I _____, choose to participate in a study on industrial design. This study aims to address the career of Gilles, his role in the founding of the School of Industrial Design at Carleton University, and the outcome. **The researcher for this study is Alisdair MacRae in the School of Industrial Design.** He is working under the supervision of Bjarki Hallgrimsson in the School of Industrial Design.

This study involves one 60-minute interview. With your consent, interviews will be audio-recorded. Once the recording has been transcribed, the audio-recording will be destroyed.

Please note that anonymity is not promised and would be contrary to the goal of this work. Since you are a public figure in this area, I do not expect you to share information that would be embarrassing to you personally or of risk to you professionally. However, you will have the option to review the thesis prior to its defense, to redact/modify statements if needed, or withdraw from the project entirely before the withdrawal deadline: 31 June 2018. You can withdraw by phoning or emailing the researcher or the research supervisor. If you withdraw from the study, all information you have provided will be immediately destroyed.

As a token of appreciation, I will credit your contribution to the project in the text of my thesis. No other compensation will be provided.

All research data, including audio-recordings and any notes will be encrypted. For interviews that occur online using Skype, your data will be stored and protected by Microsoft in the United States, but may be disclosed

via a court order or data breach. Any hard copies of data (including any handwritten notes or USB keys) will be kept in a locked cabinet off-campus at the researchers' place of residence. Research data will only be accessible by the researcher and the research supervisor.

Once the project is completed, all research data will be kept for five years and potentially used for other research projects on this same topic. At the end of five years, all research data will be securely destroyed. (Electronic data will be erased and hard copies will be shredded.)

If you would like a copy of the finished research project, you are invited to contact the researcher to request an electronic copy which will be provided to you.

The ethics protocol for this project was reviewed by the Carleton University Research Ethics Board, which provided clearance to carry out the research.

CUREB-B: Clearance #108537

If you have any ethical concerns with the study, please contact Dr. Andy Adler, Chair, Carleton University Research Ethics Board-A (by phone at 613-520-2600 ext. 2517 or via email at ethics@carleton.ca). [Use the contact information for CUREB-B – see instructions – if appropriate.]

Researcher contact information: information
Alisdair MacRae
School of Industrial Design
Carleton University
Tel: [redacted]
alisdairmacrae@cmail.carleton.ca

Supervisor contact
Bjarki Hallgrimsson
School of Industrial Design
Carleton University
Tel: 613-520-2600, ext.
bjarki.hallgrimsson@carleton.ca

Do you agree to be audio-recorded: ___Yes ___No

_____ _____
Signature of participant Date

_____ _____
Signature of researcher Date

Appendix I – Interview Questions

Carleton UNIVERSITY
Canada's Capital University

Interview Questions

1. What is your involvement with design/industrial design?
2. Do you know who Wim Gilles was?
3. How would you describe your relationship with Wim Gilles?
4. How would you describe Gilles' approach to design?
5. What factors may have shaped Gilles' approach to design?
6. Wim had a systematic approach to design. At the same time, he understood design's intuitive nature. From your perspective, which approach seemed most important?
7. What sort of impact did Gilles have on design?
8. What were some of the most memorable aspects of interacting with Wim?
9. What did you learn from him?
10. How did he impact your life?
11. What can you tell me about his career at Carleton University?
12. How would you describe Carleton University's School of Industrial Design?
13. What did Gilles contribute to Carleton?
14. What would you consider Gilles' legacy for design?

Appendix J –Survey 1 Form – Page 1 and 2 of 29

Wim Gilles Exhibition Design Exercise

This is a study on Wim Gilles. This study aims to consider who he was, why he came to Ottawa, and what was the result. The researcher for this study is Alisdair MacRae in the School of Industrial Design at Carleton University. He is working under the supervision of Bjarki Hallgrimsson in the School of Industrial Design.

This study involves one 20-minute survey that will take place online. Survey questions ask about the participants' involvement with design and their education level, then go on to ask about the objects, images, and text on display. The remaining questions gauge interest in Wim Gilles and knowledge of design and design education, particularly at Carleton University. These questions will help inform the development of the exhibition through an iterative process, as well as my future research directions.

While this survey does not involve any professional or emotional risks, you have the right to refuse to answer any of the questions. Should you feel some distress, you are encouraged to speak to the researcher who will direct you to support services.

You have the right to end your participation in the survey at any time, for any reason, up until you hit the "submit" button. You can withdraw by exiting the survey at any time before completing it. If you withdraw from the study, all information you provided will be immediately destroyed. (As the survey responses are anonymous, it is not possible to withdraw after the survey is submitted.)

All research data will be encrypted. The company running the online survey is Google based in the United States. Your data will be stored and protected by Google on a server located in the United States, but may be disclosed via a court order or data breach. Research data will be accessible by the researcher, the research supervisor and the survey company. No names or IP addresses will be linked to any of the data provided.

Once the project is completed, all research data will be kept for five years and potentially used for other research projects on this same topic. At the end of five years, all research data will be deleted.

If you would like a copy of the finished research project, you are invited to contact the researcher to request an electronic copy which will be provided to you as long as the safety of all participants will not be compromised by doing so.

The ethics protocol for this project was reviewed by the Carleton University Research Ethics Board, which provided clearance to carry out the research.

CUREB-B: Clearance #108537

If you have any ethical concerns with the study, please contact Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Researcher contact information:
Alisdair MacRae
School of Industrial Design
Carleton University
1[redacted]
alisdairmacrae@cmail.carleton.ca

Supervisor contact information
Bjarki Hallgrimsson
School of Industrial Design
Carleton University
Tel: 613-520-2600, ext. 5677
bjarki.hallgrimsson@carleton.ca

By clicking "submit", you consent to participate in the research study as described above.

* Required

What is your involvement with design/industrial design? *

Your answer

Please indicate your level of education. *

Your answer

Please rate the image in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments. *

Image 1 of 28

Your answer

Appendix K – Survey 2 Form

Survey Questions

A. What is your involvement with design/industrial design?

B. Please indicate your level of education.

C. Please rate the objects on display according to the number assigned to each.

1) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

_____

_____

_____

2) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

_____

_____

_____

3) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

_____

_____

_____

4) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

_____

_____

_____

5) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

6) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

7) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

8) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

9) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

10) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

11) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

12) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

13) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

14) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

15) Please rate the object in terms of interest, 1 being the most interesting, 2 being interesting, 3 being neutral, 4 being not interesting, and 5 being the least interesting. Feel free to add comments.

D. I feel that I knew very little about Wim Gilles before viewing the exhibition. Please state whether you strongly agree or disagree with this statement, and explain why.

E. What did you learn about Wim Gilles from the exhibition?

F. I feel that the School of Industrial Design should have a permanent display of material related to Wim Gilles. Please state whether you strongly agree or disagree with this statement, and explain why.

_____

_____

_____

G. I feel that there should be an exhibition about Wim Gilles at a national institution. Please state whether you strongly agree or disagree with this statement, and explain why.

_____

_____

_____

H. I feel that Gilles is still relevant to industrial design today. Please state whether you strongly agree or disagree with this statement, and explain why.

_____

_____

_____

I. I feel that someone should write a book about Wim Gilles. Please state whether you strongly agree or disagree with this statement, and explain why.

_____

_____

_____

J. What did you learn about the School of Industrial Design from the exhibition?

_____

_____

_____

K. How would you describe Carleton University's School of Industrial Design?

_____

_____

_____

Appendix L – Survey 2 Recruitment Poster

Carleton UNIVERSITY
Canada's Capital University

Wanted:

Participants for an Exhibition Design Exercise
15-30 September 2018

To participate in this study, you must be:

- ✓ An undergraduate student in Industrial Design
- ✓ In the first, second, or third year of the program

This is a 30-minute study. You will be asked to view a display of objects, images, and text related to Wim Gilles, the late founder of the School of Industrial Design, then provide feedback via a survey.

All responses are anonymous.

Participants will be compensated with $8 cash.

Please contact the researcher, Alisdair MacRae, for more details on this study – alisdairmacrae@cmail.carleton.ca.

This ethics protocol for this project was reviewed by the Carleton University Research Ethics Board, which provided clearance to carry out the research. If you have any ethical concerns with the study, please contact Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

CUREB-B Clearance #108537

Appendix M – Summary of Interview Results

Identity

Research Question: Who was Wim Gilles?

Interview Questions

1. What is your involvement with design/industrial design?
2. Do you know who Wim Gilles was?
3. How would you describe your relationship with Wim Gilles?

He was director of the school, I was his visiting professor, he was a gentleman and a friend. And a mentor.

Brian Burns
Professor, Carleton SID

4. How would you describe Gilles' approach to design?

Wim was the consultant to the federal government of Canada when they put it together, because there was an agency then within the federal government called Design Canada, and there was a kind of a Design Council that advised industry and government on good design policies. And, Wim had been brought in as a consultant to lead a study about a creation of a new school.

And I think his own sort of background and his leaning towards a more engineering-based, not hard-core engineering, but where there was more in the education of a designer, beyond drawing and form and colour and things of that nature. There had to be also the more pragmatic, practical side to it as well, where there was economics, but also structures, materials, processes and that. And that's what differentiated our school, the school where you're at, from almost every other school. It leans more towards the applied sciences, engineering side of it.

Jacques Giard, PhD
Former Director, Carleton SID
Interim Assistant Director, The Design School
Herberger Institute for Design and the Arts
Arizona State University

Well, I think the best way to look at that, there is a somewhat stereotypical way to look at design in Europe versus the States. In the States, design is viewed often as styling, and design in Europe is seen as all-involving, from materials, manufacture, appearance, et cetera, et cetera.

And there is a line from Wim, which was that if you don't understand materials, how they're made, and how you make things from those materials, then you can't design. And, I think if you're giving form, giving form in that German sense, to an object, you have to understand that the materials are easily able to do that. If you force anything to do something it shouldn't do, it will come back and bite you.

Brian Burns
Professor, Carleton SID

And of course, one of Wim's qualities at that time was that he could finish the job. And he said, I'm going to make a tea kettle, he made a tea kettle, and they did the cookware, he made the cookware, when, with Rudi, they started to build that factory for making polyether foam, for Dumont-Wyckhuyse, they did it. There was nothing that he didn't bring all the way to the market. You know, he always finished his product, and that was a very unusual thing.

Koen De Winter, PhD
Professeure associé à l'École de design
Université du Québec à Montréal

Wim's approach? He certainly came from that technical background. When people got into talking about products, or designing products, he would very quickly want to know all the details. And so, how many are you thinking of producing, he would immediately start thinking about, if you're going to produce products, it's important to know whether you're going to do 1,000, or 100,000, because you're going to design something different for the100,000. You've got the volume then to support development costs. And, material can be different, and so, he was very technical in his approach. And that reflected his background.

Martien De Leeuw
Former Director, Carleton SID

5. What factors may have shaped Gilles' approach to design?

For Wim, things that work, and not only mechanically, let's be clear, but socially, it has to work in the market, it has to be the just solution, because unjust solutions don't work in the long-term.

He doesn't apply a system on the world around him, no. He first develops a system, and then checks if it solves all the problems that he can find. That's a typical Wim Gilles approach.

Koen De Winter, PhD
Professeure associé à l'École de design
Université du Québec à Montréal

The schools, Bauhaus, and that was in the 30s and 20s, then Hochschule für Gestaltung Ulm and Akademie voor Industriële Vormgeving in Eindhoven…in the 50s, a real school for industry. Then, it was in a time that the rebuilding of Holland, the restarting of the industry, the technology was coming up, it was more and more electrical. The evolution between hand and technique, that was that time. A lot of information came from the States, know-how. And then, then came the questions, who is the maker of the product, and who is the buyer, and what are the reasons that the buyer chose that product. And that is the start of industrial design.

Rudi Verelst
Professeure associé à l'École de design

Université du Québec à Montréal

Wim met Buckminster Fuller in the States. He did not meet him personally, but there was a presentation of Buckminster Fuller's at a university, I don't know where, and he told me that he heard Buckminster Fuller speaking. And he was really impressed by the knowledge of that man and the combinations that he could make, and Buckminster Fuller was more technical, but what an incredible memory. And, a lot of things, I think that he had a certain influence on Gilles, because there was a time that he was thinking about structures all the time.

Rudi Verelst
Professeure associé à l'École de design
Université du Québec à Montréal

Form organization is basically about the shape, not the structure. See, if it was created by Buckminster Fuller, it's structure, he creates a dome, and it's not about the shape of the dome, it's how the dome is made. Whereas Wim is very much about the shape, it's not about structure at all, it doesn't give you any indication about the structure. It's really form organization. Whereas Buckminster Fuller is looking for something else, he's looking for a new way of creating structures. For buildings, for 'x' number of things. He's not that interested in shape, in fact, the shape will come from the structures.

Georges-Frédéric Singer, PhD
Directeur du Centre d'expérimentation et de
développement des technologies multimédia – ÉCHO
Université du Québec à Montréal

6. Wim had a systematic approach to design. At the same time, he understood design's intuitive nature. From your perspective, which approach seemed most important?

When in doubt, you go to the rules. So, when you get stuck, you go back to the systematic, you go back to hindsight, you go back to, hang on, what did we do, what was wrong here. So, I think the systematic approach is good to help people understand all the things that have to be thought of and considered in doing a systematic approach to design. And the big advantage, of course, is--as anybody will tell you in design, or should tell you--the important part is to get rid of bad ideas as soon as possible, and not waste money along the way, making models and prototypes that are costly and are wrong.

Brian Burns
Professor, Carleton SID

Wim would very quickly push things towards let's get real here, what can we do, right? What is it that you're thinking, and he imagined the volume of a product. It's a huge influence on how you were going to tackle the design work. Without a doubt you can't do without that part. But, if you do go without it, you just end up with that old idea, throw it over the wall to the engineers, and let them figure out how they're going to make it, which usually results in changes to the design. That's always been the concern.

Martien De Leeuw
Former Director, Carleton SID

7. What sort of impact did Gilles have on design?

Wim often said remember, "We don't graduate products, we graduate people. So, when you come to the show, don't look at the products necessarily, look at the people." And so, he was an advocate of showing people, because design magazines don't show people, they show products.

Brian Burns
Professor, Carleton SID

8. What were some of the most memorable aspects of interacting with Wim?

And he certainly went out of his way to make great connections with industry. This was not creating a design school that was based on some philosophical platform where you don't need industry. No, industry was important.

So, there's something that Wim did, he brought the functional aspect to the same level as the formal aspect. That would be his legacy for me, that industrial design is about these two areas equally, not one more than the other.

Jacques Giard, PhD
Former Director, Carleton SID
Interim Assistant Director, The Design School
Herberger Institute for Design and the Arts
Arizona State University

Occasionally, he was convinced if he could just teach us a bit of a Dutch, we'd become better designers. They were definitive words, there was some word, ask Koen what the word is for cuteness, or cozy. There are some words, and he claimed there is no really good equivalent in English, and if we would understand this quality, we would become better industrial designers.

Heidi Overhill
Alumni, Carleton SID
Professor, York University/Sheridan College
Joint Program in Design

9. What did you learn from him?

You didn't say I have to design a chair. You said I have to design a device that keeps a person. Yeah, what person? Well, an adult. What kind of adult? You know, it was…above the ground. Why above the ground? It was always, you always had to go back twenty questions.

Koen De Winter, PhD
Professeure associé à l'École de design

Université du Québec à Montréal

He was explaining to me how in the Netherlands, universities were separated in three groups; alpha, beta and gamma, three faculties, science, humanities and social science. And yet, and that's the major awakening, and yet, he said, there are other things, like agriculture, architecture, management, et cetera, that are outside of the university. So, our great, great, great discovery, we called this Delta. And we did a piece on Delta knowledge and comparing this with management, which we both felt was the most interesting thing we had seen in a while. We could defend our type of knowledge, we could define it.

Gilles Paquet, PhD
Professor Emeritus, Telfer School of Management and at the
Graduate School of Public and International Affairs
University of Ottawa

10. How did he impact your life?

To him, it was something that you, it was, as a professional, you had to do three things: You had to exercise your profession, you had to develop the profession, and form organization to him was really developing the profession

You also have to teach, it's part of your duty to pass on what you have received to others. And what you have learned through experience, and what you have, of course, developed, as he did with form organization. For him that was very strongly the structure of a profession like design, there are three elements.

You exercise your profession, you develop your profession and you teach your profession.

Koen De Winter, PhD
Professeure associé à l'École de design
Université du Québec à Montréal

I happen to discover it as he was doing it [Delta knowledge] naturally. My interaction with him, and I've been able to do more of a conceptualization of it. And, he had a systematic approach to design, you are right, he understood design intuitively, you are right. I could not be that good. I came to him, he was doing it naturally and organically. I was unable to do it that way.

Gilles Paquet, PhD
Professor Emeritus, Telfer School of Management and at the
Graduate School of Public and International Affairs
University of Ottawa

I would say, having learned doing is quite different from babbling, he was not in the babbling game. He was in the doing game, and it was probably, if I'd been closer to him, he would have been showing me how he had designed some chair, or some pair of skates, or whatever it is that he did. But at the end of the day, it was experimental, it was always as a person who is a, a

person who was sculpting, letting emerge that particular fine form out of babbling, sort of trial and error.

To me, he would never have been thinking about Delta knowledge, because he was living Delta knowledge, and my role, was almost helping this notion to emerge, with knowing very clearly that it's not mine. It's by looking at this man's work that I was able to even think that way. And so, in all of these books you'll find the notion of Delta knowledge everywhere, largely as a new way of testing things.

Gilles Paquet, PhD
Professor Emeritus, Telfer School of Management and at the
Graduate School of Public and International Affairs
University of Ottawa

Purpose

Research Question: Why did he come to Carleton?

The theory that I heard was that Design Canada decided that Canada needed a degree-level Industrial Design program. The only place that taught industrial design in those days was the Ontario College of Art, and OCA, as it was then, was just a diploma. And the technocrats at Design Canada felt that this was not enough to win the respect of captains of industry. You need a designer with a university degree to impress potential clients as the validity of this bizarre profession. And so, so this is the story I heard, they designed this, and they found, I don't know how they found Wim Gilles, but they hired him, and they probably would have approached another university. So, Carleton would have fallen for this, and then, somehow they acquired Wim.

Heidi Overhill
Alumni, Carleton SID
Professor, York University/Sheridan College
Joint Program in Design

Well, Design Canada was very much a part of this, they were the initiator. Industrial design was seen as a definite commercial asset, and the lack of an industrial design program in Canada at the time, I don't think Calgary was running at the time, I'm not sure. But, essentially there was a need for a program in industrial design. And then, at some point, I imagine it was either with Design Canada, or maybe just Carleton, there was a search. So, they looked around the world to find a suitable person to be able to put something like that together, and finally, the search came to Wim.

And then there was the other question, would that be in the Architecture department, or in the Engineering department. And on that, Wim had a very definite opinion, and it should be in Engineering.

Georges-Frédéric Singer, PhD
Directeur du Centre d'expérimentation et de

développement des technologies multimédia – ÉCHO
Université du Québec à Montréal

11. What can you tell me about his career at Carleton University?

I think the only thing I haven't touched on probably was his ability to know people across campus in different disciplines, and to build rapport for the school. So, he not only created an excellent program at Carleton, but he wanted it to be broad, to spread, and to connect. And, I know he, not for himself, but he wanted to build a program that would carry on, and be relevant.

Brian Burns
Professor, Carleton SID

Result

Research Question: What was the outcome?

12. How would you describe Carleton University's School of Industrial Design?

We did focus more on the technical aspect, and I think that served the school well, and it served the students well when they came into industry. I do remember getting feedback from students how people in industry were surprised that they knew something about plastics, or they knew something about injection molding, or how to bend steel. We did at least touch on those things and that was different from other schools.

Martien De Leeuw
Former Director, Carleton SID

13. What did Gilles contribute to Carleton?

Wim was looking for people who had begun training from design, but experience was more important. That was always his idea, that experience in the industry, and design, was very important. And that's true, for training people for industrial design, and if they never saw an industry, that's a real problem.

Rudi Verelst
Professeure associé à l'École de design
Université du Québec à Montréal

14. What would you consider Gilles' legacy for design?

I think he certainly helped a school that will carry on and grow, but I think more importantly, he touched many people who will carry his thinking, his attitude, not just in design, but in terms of who he was, how he dealt with people, and I think that's invaluable. It's his effect on people and their ability to design and to function as people. Helpfully, respectfully, et cetera.

Brian Burns
Professor, Carleton SID

What would Wim's legacy be, if he had a legacy, either for design or education, because he's sort of involved in both areas, what would that be?

Well, the school. And I think his contributions to the school would be so wide ranging, and so subtle, that you could never disentangle it. You know, the mind that could come up with the graduated start of the curriculum, with, you know, coming exploitation of the existing resources, I mean it's truly a design problem, it's a meta-design problem.

Heidi Overhill
Alumni, Carleton SID
Professor, York University/Sheridan College
Joint Program in Design

Well, I think as a designer, I think he, if you look in terms of Dutch design, he's a very well-known Dutch designer, he's left a legacy, and so on. I think his personal, professional work, I think he had settled that before coming to Canada, I think that was a fact before. What he left Canada was certainly the school, I think that's what he really cared about. So, I think he was already an internationally known designer before coming, the selection committee had gone to the world to try and figure out who should run the school, and they found him. They chose him.

Georges-Frédéric Singer, PhD
Directeur du Centre d'expérimentation et de
développement des technologies multimédia – ÉCHO
Université du Québec à Montréal

D) I feel that I knew very little about Wim Gilles before viewing the exhibition. Please state whether you strongly agree or disagree with this statement, and explain why.

1 I know next to nothing about Wim Gilles before, and I'd never been told much about him.
2 I strongly agree with this statement because I had never thought that our founding father of SID had much an impact.
3 I knew nothing about him before this, so I agree
4 I strongly agree. I have never heard of them before
5 I agree with this statement, I did not know who he was before today
6 I strongly agree…I didn't even know who he was
7 Agree. The info and visuals give better insight to viewers.
8 Agree, I knew nothing
9 Agree, I didn't know who he was before this
10 Strongly agree, never heard of them before
11 I've heard about the founder when research and applying to ID but never really got a chance to see what he has done in his career
12 Strongly agree, no idea who he was
13 I feel like I know a medium amount, as I got taught about him
14 Strongly agree, some products were recognized but most I wouldn't recognize as his

E) What did you learn about Wim Gilles from the exhibition?

1 I learned his design style is simple, which I like.
2 I learnt that he's a hardworking man who touched upon many people. He understood the form but also the practicality of design.
3 About his designs and the way he works
4 He worked on many different kinds of products had many steps in refining his designs
5 He is very gifted, and talented. I love how he developed and improved his own work
6 I learned he is an acclaimed designers who did a lot for Canadian design
7 His designs seem very 'classic and 'common'
8 He was chosen by design Canada to start I.D. at Carleton
9 He focused a lot on form
10 Has a thing for curves and dull colours, neutral designs
11 I learned that he was a Dutch designer who came to Canada and was involved in starting a design school
12 He designed variety of sport related objects along with some others
13 Most about how he designed
14 Models/giving size reference/context is important to hold interest

F) I feel that the School of Industrial Design should have a permanent display of material related to Wim Gilles. Please state whether you strongly agree or disagree with this statement, and explain why.

1 I disagree with the idea of idolizing humans so I'd say that a permanent exhibition might be a bit much.
2 I strongly agree with this because as I filled this survey, many people walked by in interest of the display.
3 Agree because its always interesting to learn about designers and see their work.
4 If we knew about him more it would be more beneficial.
5 I agree with this statement. I think if we have his work, or anyone else's work, displayed, it'll aid our knowledge
6 I disagree solely because I don't not think that this design is relevant, I think student work or recent alumni work should be displayed
7 Disagree - He isn't that well-known because his designs weren't used as inspiration or they weren't considered revolutionary

8 Agree. It’s an interesting to know the programs history.
9 Agree-his play with form is very interesting and makes you think more about form
10 Disagree, could have much more interesting and eye catching stuff. Female designer!
11 I strongly believe they should because ID at Carleton isn't really published and know well for it's alumni and founder
12 Agree, interesting objects for students to look at
13 Although I would say it's very interesting I wouldn't say it has to be permanent
14 Agree, shows simple style in wide range of products

G) I feel that there should be an exhibition about Wim Gilles at a national institution. Please state whether you strongly agree or disagree with this statement, and explain why.

1 I think design or product museums should feature important work, so I think this would be a good idea.
2 I would disagree with this statement. I believe Wim's place should always be at Carleton.
3 I feel like he's a interesting designer so why not
4 He had an influential stamp on design and has a lot to offer with his Canadian roots
5 I agree with this statement, because his work is very fascinating
6 If I can day neutral I choose that, if not I say disagree b/c I still don’t' know enough about him
7 Agree. For history purposes, he is worth having on display
8 Disagree, a majority of his career was from when he was in Netherlands
9 Agree-because we can learn from all designers and history is important and interesting
10 Maybe into a whole exhibit, not interesting enough, 2-4 pieces maybe
11 Maybe not in an national institution cause there aren't a big collection of his works I don't think
12 Agree, bring awareness to ID and Carleton and Wim Gilles although would be imporved with more to display
13 I have too little knowledge of how Gilles influenced Canada to form an opinion on this
14 Disagree, unless he was a trigger to a revolution…I believe he could appear within other exhibits

H) I feel that Gilles is still relevant to industrial design today. Please state whether you strongly agree or disagree with this statement, and explain why.

1 I think Gilles' style is important, because good design is simple and elegant.
2 Gilles is still very relevant to ID because the field is pertinent no matter how long it spans. What Gilles designed years ago will be of use for reference for years to come.
3 I agree because design evolves over time and its cool to see how we got to where we are today
4 His methods of sectional modelling and explorative drawings are still used.
5 I agree with this statement because his work is very inspirational
6 Agree, I think his designs are not relevant but his legacy, process and designs for that era made him relevant
7 Agree. We can learn things from all designers.
8 Agree, his focus on materials and how to use them is the backbone of ID at Carleton
9 Agree-form is always important in design
10 In terms of curves and exploring form yes, kind of
11 Yes it is still relevant because the works he did still applies to course and studio work today (i.e. cross sectional model)
12 Yes made some revolutionary intentions/designs/was a pioneer
13 I do. As a Dutch person, I feel like he's the forfather of us ID in the Netherlands
14 Agree, we still use similar design methods

I) I feel that someone should write a book about Wim Gilles. Please state whether you strongly agree or disagree with this statement, and explain why.

1 If someone wants to write a book about him, that would be good. Otherwise I don't think it's an urgent matter.
2 I disagree with this statement because books are a very lengthy way to communicate information. A display such as the one I saw is great.
3 I feel like it could be interesting to read about the work he has done

4 Agree. He was a founder of the best fucking ID school ever
5 I agree, because there is so much to learn about
6 Agree, I think the more records we have of the past the better, reflection creates growth
7 Perhaps a design process book with more visuals would benefit designers.
8 I'm not sure based off what I learned at the display
9 Agree-you can go more in depth and learn a lot
10 Would be interesting to learn more but not sure I'd read it
11 Probably not a book but more of a picture/text book, novel/biography
12 Agree, important to share stories and history
13 Yes, I think a lot would be learned from it
14 Agree, give more context as to why he went down this path

J) What did you learn about the School of Industrial Design from the exhibition?

1 Very little, I suppose.
2 I learned that we should be proud of our school and to be conscious of the duty we have as designers.
3 That we still examine and care about older design
4 Strong roots back to the olden days
5 That there is so much you can do and design from phones, kettles, computers and kettle.
6 That as much as design has changed the key concepts remain the same
7 That we look to designers as examples and learn their way of designing.
8 How it was founded and some of the cornerstones of the program.
9 That to be a good designer you need to be well rounded in engineering and business and therefor this should also be taught at school
10 Really do draw from the past, work on the building blocks of design
11 He was the founder of Carleton's ID program
12 Not a ton
13 Not much
14 Well designed products/models last a long time and may still inspire interest in those learning

K) How would you describe Carleton University's School of Industrial Design?

1 I'd say it's a good program.
2 The SID at Carleton is a very up-to-date program that understands the fundamentals of design and our responsibility as good designers.
3 THE BEST PROGRAM, because its so interesting and unique. Also its so small so its very close and makes you feel important/special.
4 Ever evolving
5 The school for industrial design is very diverse in terms of ideas and styles of drawing, designing and making.
6 Real life solutions real life problems
7 A great, innovative program where multiple skills can be acquired to allow for the possibility of many possible job positions.
8 Practical and theoretical.
9 A great innovative school that teach valuable skills to students
10 Amazing and constantly improving to meet students needs.
11 A technical driven design program compared to other design programs
12 Great program, hand on, very interesting and engaging
13 In my eyes, it's quite small, but a nice and open work atmosphere (I'm from TU Delft where we have 350 students in every year in ID)
14 Widely rounded to help equip students with techniques to design a wide selection of products

Appendix O – Discovery Centre Survey

Discovery Centre Exhibition Survey

The following five questions can be answered anonymously. The feedback will be used for future exhibitions.

* Required

1/5 What do you think of the display? Please rate it on a scale of 5, 5 being the most interesting. *

Your answer

2/5 Do you think the display was useful or informative? Please rate it on a scale of 5, 5 being the most interesting. *

Your answer

3/5 What is your favourite aspect of the display? Please rate it on a scale of 5, 5 being the most interesting, 1 being the least interesting. *

Your answer

4/5 What is your least favourite aspect of the display? Please rate it on a scale of 5, 5 being the most interesting, 1 being the least interesting. *

Your answer

5/5 What would you like to see displayed in the space? *

Your answer

Appendix P – Proposal for Graduate Program at Carleton University

A GRADUATE PROGRAM IN INDUSTRIAL DESIGN
AT CARLETON UNIVERSITY

A First Study

W. Gilles
Director
School of Industrial Design

December 1979

I. ARGUMENTS IN FAVOUR OF A GRADUATE PROGRAM IN INDUSTRIAL DESIGN AT CARLETON UNIVERSITY

A. Societal Arguments

1. Over the past decade, the Government of Canada (National Design Council, Design Canada, Department of Industry, Trade and Commerce) and the Provincial Government of Ontario (Ministry of Industry and Tourism) have increasingly promoted industrial design (product design). In their opinion, the improvement of (product) design capability in this country will improve the quality of industrial design, strengthen the position of Canadian products on the export market and stimulate the secondary manufacturing industry.
   Based on this philosophy, the Department of Industry, Trade and Commerce strongly supported Carleton's initiative to establish a School of Industrial Design, which would soon reinforce Canada's design potential with new generations of highly qualified designers who would be oriented towards product design and development. From 1972 till 1975, Carleton University received grants from the Federal Government totalling $198,225 to assist in the development and establishment of the School of Industrial Design.
   Unlike most other programs of design education, the School of Industrial Design is not based on and integrated in a fine arts department and it grants a new degree, that of Bachelor of Industrial Design, which is not granted anywhere else in Canada and only in a few universities abroad. In the opinion of the Office of Design, Department of Industry, Trade and Commerce, industrial (product) design education in Canada needs to be expanded further with a graduate program for industrial design. Its historic relations with Carleton University and the success of the School of Industrial Design are strong factors for the Federal Government in favour of establishing a graduate program at Carleton rather than elsewhere in Canada, namely at the University of Calgary, which is planning to add graduate studies in industrial design to the options in its Faculty of Environmental Design.

2. For graduates of the School of Industrial Design there is no choice to acquire a second degree in Canada other than one in fine arts. Such a second degree does not appeal to most graduates of the School. Their