Article

Making Up Soldiers: The Role of Statistical Oversight and Reactive Path Dependence in the Effectiveness of Canada's WWII Mobilization Program 1940-1943

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Abstract

This paper demonstrates how specific surveillance technologies adopted in Canada during the Second World War enabled state actors to successfully conscript individuals into the Armed Forces. In 1940 the Federal government initiated a National Registration of all those under the age of sixteen living within the Dominion. Soon after, collected data were processed and certain populations were identified to be called into the Armed Forces. Although conscription had officially begun in 1940, a reorganization of the National Registration and mobilization system initiated in 1942 brought a new array of statistics-focused surveillance technologies into the procedure of selecting, calling men into service, and ensuring compliance with issued mobilization orders. These changes led to significant increases in the number of men that were successfully conscripted per month, pointing to the capacity of these new policies and technologies to assert greater statistical oversight and management over system staff as well as its target populations. This paper argues that the observable change in the effectiveness of the National Registration and mobilization system to conscript identified individuals into the Armed Forces came as a result of the new set of surveillance technologies adopted in March 1942. Specifically, these changes prompted a new means of statistical oversight and management, while they also worked to develop of a form of reactive path dependence in how data flowed within mobilization offices.

The result was so favorable and the impact so great. – Department of Labour 1943 Letter to MacNamera from Shaw July 19th 1943 RG 27 vol. 3003 file: Equipment 1943-1944 [20-8-5]

Introduction

In March 1942 the Department of Labour took over the task of conscripting men into the Armed Forces, bringing with them the cutting-edge technological tools of manpower accounting¹ and an experienced team of accountants, clerks and support staff. Upon taking up this position, the conscription, or “mobilization” of men, as it was referred to by government officials seeking to avoid the negative politics of the word “conscription,” increased dramatically from a monthly average of 3,736 to a high of 6,833 in

¹ A term referring to data management regarding the manpower resources of an institution, relating specifically to data regarding (1) the resources available to the institution, (2) the allocation of resources, and (3) the activities conducted, while managerially providing “both some way of classifying the resources that will allow differentiation of distinctly different ones; and a way of measuring the amounts of each type of resource available for assignment in the institution” (see for example Jones and Drews 1977).

July 1942—accounting for an average monthly difference of over 1,000 men (Stacey 1970: 387-398, Stacey 1970 Appendix T—“Enrolments Under the *National Resource Mobilization Act*”: 599-602). This change, however, did not come about as a result of a significant increase in the number of legislated “callable men,” but instead coincided with the implementation of a new centralized management structure, new surveillance-focused technologies, and new staff organizational policy within the National Registration and mobilization offices. In this case, these surveillance technologies were adopted as a technological in order to “facilitate the control of people” (Monahan 2009: 287), and as such were embedded with particular governing rationalities which worked to mediate social interactions within specific institutional spaces (Star, Bowker and Neumann 1997; Lessig 1999). In this case, surveillance technologies took the form of punch cards, tabulation sheets and index card catalogues, while the institutional spaces included the mobilization offices and army training camps associated with conscription. This paper problematizes how it is that individual performances are made to match the governing rationalities of particular institutions, demonstrating the technological and social mechanisms which makes this process more effective through the particular case study of conscript soldiers in WWII Canada. Although much has been written regarding the role of surveillance in shaping the social relations of techno-social spaces, as Haggerty (2006: 41) notes: “governmental studies have concentrated almost entirely on discourse analysis and have been reluctant to explore the nitty-gritty politics of governance or the experience of subjects.” In this way, this type of empirical case study which places a focus on the “on-the-ground” performances of targeted populations and their adherence to rationalities of governance, addresses a crucial gap in the literature relating to the role(s) that specific technologies and forms of social organization play in the governance of populations.

At first glance, pre-electronic registration technologies and the paper ID cards of 1940s Canada may not spring to mind as prototypical examples of governing surveillance technologies in quite the same way as the more obvious expressions of heavy handed enforcement practices of police raids, or more current electronic-era “big data” technologies. It is important, however, to address the fact that these National Registration and mobilization technologies, even in the war period, worked effectively to establish a system of surveillance that was capable of governing a multitude of individuals and, like later iterations of surveillance technologies, was committed to compiling information about its subjects “for the purpose of discriminating decision-making,” as well as using this “decision-making apparatus to enforce compliance with certain rules” (Rule 1973: 98). In this way, the link between implemented technologies and the “tightness,” or mediating capacity, of governmentally ascribed categories is demonstrated in the significant increase that was observed in the capability of the mobilization system to “call-up” individuals into service in the Armed Forces that came about as a result of the system’s 1942 technological and organizational innovations. This paper, however, does not take up an argument of technological determinism, since it is acknowledged that the mobilization system relied on the participation of its staff and those whom it called into service; however, the adoption of new technologies and organizational structures did enable a new form of management and oversight, that in turn, worked to shape social relations in particular ways within mobilization offices, while also enabling a new capacity to identify and apply sanctions to those who failed to conform.

What makes WWII conscription in Canada such an excellent case study of the mediating capacity of surveillance technologies is the fact that Canada maintained both a voluntary *and* a conscript military force concurrently, from 1940 until the end of the Second World War. Each individual who wanted to fight could freely volunteer to serve, and was given ample opportunity to do so. Those who passed through the process of being called into service through the technologies of the National Registration and mobilization system could also at any time choose to “go active” and “volunteer.” For this reason, those who had not chosen to voluntarily take up the social duties of being a soldier, who needed to be pressed into service through the technologies of conscription, and who remained conscript soldiers within the Army, can be understood as having been subjected to some sort of external governing intervention. In this way, the act of conscription in Canada needs to be understood as an unwanted, or coerced social act, since

all those who in any way wanted to be soldiers would have volunteered. It is also important to note, regardless of the degree of normality that the concept of WWII mobilization now holds culturally, that this system's classifications carried real, serious, and lasting social consequences for all those it touched—having ultimately pressed over 150,000 individuals who did not freely choose to join the Armed Forces into forced service within the Army (Stacey 1970: 599-602).

This paper investigates the government's centralization of the management of the National Registration and mobilization system under the authority of the Department of Labour, charting its adoption of technologies of statistical oversight and establishment of set data flows, arguing that the implementation of these particular surveillance technologies resulted in a greater observable change in the performances of conscripted individuals—that is, the taking up of actions that matched system rationalities and government mobilization legislation. More specifically, this paper argues that two key elements of the technologies and social organization that were implemented in 1942 rendered the system more effective in governing individual performances and worked to tighten the system's ascribed categories onto its target populations. First, that the adoption of new technologies associated with manpower accounting and statistical oversight resulted in a better capacity to centralize decision making within the mobilization system, and developed a greater ability to identify the status of individuals to be conscripted, as well as worked to enable a new capacity to assert accountability within mobilization staff. Second, that new policies and organizational rules worked to enable a form of “reactive path dependency”² in which an overarching, one directional, sequential logic worked to assert a progression of all conscription cases. Together these two points shaped the techno-social environment in which the work of selecting men to be conscripted was done. Where previously individual cases were scrutinized based on staff understandings of individual merit and institutional goals, under the new system, individual cases were managed as abstractions, inserted into a set progression of events in which social identities, mobilities, practices and contexts were coded into data, and these data were made to fit singular imposed government categories. In short, the implemented changes, having reduced all of the complexity that made up each of these people's individual character, fixed mobilization staff actions to the reading of these peoples based solely on their systematically assigned categories and their singular point along the path to conscription. As Monahan (2009: 299) has noted, this type of reduction exerts “a normalizing effect that masks th[e] inherent politics” of these types of social acts, making them seem value free, neutral, or obvious (also see Winner 1986). After a brief review of the technologies and organizational policies employed in Canada's WWII National Registration and mobilization system during the 1940-1942 period, the new technologies adopted in March 1942 will be taken up in detail, stressing the role of statistical analysis, the assertion of a kind of reactive path dependence, and the way these concepts were expressed in the new technologies of the “Statistical/Accounting Card”³ and the “Control Card” catalogues respectively.

National Registration and Mobilization

The World War Two system for conscripting individuals into the Armed Forces in Canada was initiated after military defeats suffered in Europe in the 1939-1940 period. The unexpected rapid expansion of German territory, coupled with the perceived ease of this advancement, worked to alarm government officials in Canada and the other Allied countries, spurring them into action designed to more effectively direct material and human resources toward the war effort (Department of National War Services 1941). Although the term “conscription” remained publically unpopular in Canada, particularly in the French

² A term referring to the capacity to assert an established, pre-determined, sequential chain of events through which data progressed, and in which each of the events within this sequence was implemented as a reaction to the previous event (see Mahoney 2000: 509). This concept will be taken up in greater detail later in this paper.

³ The term “Accounting Cards” was used interchangeably with that of “Statistical Cards” within the Department of Labour and referred to the same technology (see Department of Labour 1944).

dominated province of Québec, the *National Resources Mobilization Act* (NRMA) was passed in early 1940.

In Canada the matter of conscription was a highly polarizing one, leading to direct action protests during the First World War that had even resulted in the burning down of government registration offices in the largely French Canadian province of Québec in March 1918 (Auger 2008). The situation was seen as so precarious by the federal government that the Army had been called in to ensure that order was maintained throughout the province for the remainder of the First Great War. During the Second World War, public announcements regarding conscription were approached cautiously by the government, and a compromise was developed where the deployment of conscripted men would be strictly limited to only positions within Canada and its territorial waters, while it was repeatedly stressed publically that conscripts would not fight overseas in Europe (National Resources Mobilization Act 1940: sec 3).

Conscription was such a heated political issue in Canada because of the discord it developed between the rationalities of British Imperialism and those of civic nationalism which both dominated Canadian politics in the pre-war and wartime periods (Breton 1988; Farney and Kordan 2005). In this way, the issue of conscription split the population—where those adhering to British Imperialist ideals saw military service as a necessary part of being British subjects and of demonstrating loyalty and duty to their King and country, while those taking up rationalities of civic nationalism saw conscription as a dictatorial decree imposed by a foreign ruler. This split generally found expression in the distinctions between English and French Canada, though sentiments on both sides were expressed by individuals across the Dominion.⁴ For this reason the Canadian government faced pressure on one side to legally require the civic nationalists, seen largely as “French Canadians” and “foreigners” to do their duty for the war effort as subjects of the British Crown, while on the other side the government could not be seen as bowing to a foreign power’s desire to force “Canadians” into the brutality of a wholly European war. The government’s decision was to try to find some middle ground by restricting the deployment of conscript soldiers only within Canada and its territorial waters, while deploying volunteer soldiers to the European front. In effect, this produced simultaneously one volunteer, or “General Service” force, and one conscript or “NRMA” force, side-by-side within the same Canadian Army.

Under the National Resource Mobilization Act (NRMA), a nation-wide registration of all individuals over the age of sixteen was required, collecting personal information regarding the individual’s age, name, address, conjugal condition, racial origin, country of birth, naturalization status, occupation, work training, and general farming skills—including if they were able to drive a tractor or milk a cow (Department of National War Services 1940).

Internally within the government, the function of this registration was to identify “available” men—men who were not employed or trained within one of the government’s 200 identified “necessary” industries—and then to forcefully direct as many of these individuals as possible into the Armed Forces (Department of Labour 1949: 5, 9, 47). Publically, however, the registration was depicted more as a type of census, or “taking stock” of the population living within the Dominion, and the Act was consciously designed to carry sufficient “window dressing” in order to obscure its real, publically unpopular, function of forced military service (Globe and Mail 1940; Byers 1996: 178). Data were collected across the country over a period of three days between August 19th and 21st 1940. As part of the National Registration everyone over the age of sixteen living within the Dominion was to report to their local polling station and register their data with a government official. After these data had been collected and recorded onto sets of specific National Registration forms or “Questionnaire Cards,” the cards of men of military age were

⁴ A plebiscite regarding conscription was held in 1942 which showed a 65/35 split in favor of conscription within Canada generally, and a 70/30 split against conscription within the predominately French province of Québec (Nohlen 2005: 127-130).

duplicated and assembled to form a regionally held card catalogue of “potentially callable men,” while the original cards were sent on to Ottawa to form what was referred to internally as the “Central Registry”.

(Department of National War Services 1940). Once collected, Ottawa’s Central Registry, made up of the original Questionnaire Cards, was then analyzed by a team of statisticians drawn from the Dominion Bureau of Statistics, their task being to identify individuals who were employed or trained within the government’s “necessary” industries (Department of National War Services and Dominion Bureau of Statistics 1941). As a result of this work, those in charge of the conscription process, or the “National Registration officials,” were then supplied with lists detailing the identified necessary men—these lists ultimately reaching fifteen miles in length (Department of National War Services 1941).

The Mobilization System 1940-1942

During the early years of the war, the calling up, or mobilization, of individuals into the Army relied heavily upon the discretion of the local government officials that staffed the regional National Registration Division offices as the National War Services Regulations 1940 (Recruits) specifically allocated this task to regional “Divisional Registrars” (sec 9(6)). As a means of organizing the mobilization process, the country had been separated into thirteen administrative districts that mirrored the Canadian Army’s distribution of training facilities across the country. Each of these National Registration regional Division offices were run fairly autonomously under the authority of a local “Divisional Registrar” and their staff. Under the policies of the early mobilization system, these offices, in co-ordination with local business interests, would use their Questionnaire Card catalogue to select men to be conscripted into the Armed Forces (National War Service Regulations 1940 (Recruits) sec. 9, sec. 15).⁵

The actual selection of men was done by mobilization staff at the level of the regional National Registration Division offices, each having their own method for assessment and selection. Their only direction had been to “so far as is practicable ... select the number from the younger men of the age class” and “to call out men proportionally from all parts of the Division” (Department of National War Services 1940 National War Service Regulations, 1940 (Recruits) sec. 9(6)). At a meeting in April of 1942, registrars explained how they made their decisions, as a means of attempting to develop some form of “best practices.” As the Registrar from Halifax noted of his particular method of selection, he had “divided [the district’s] men by constituencies according to occupation,” then used 1931 census data to incorporate into his selections an equal distribution across populations—“take Antigonish-Guysborough,” he explained, “which has the smallest population, as the figure 1, Halifax city and county would be 4, and for every man called from Antigonish-Guysborough I would call four from Halifax” (Department of Labour 1942). Under the legislation, local businesses were also to contact National Registration Offices with priority lists of their employees, ranking each on a scale from “necessary” to “dead wood,” but no standardized process of determining what men to call, other than the age groups and communicating with local industry had been set out in the Order-in-Council, had been established at the National level during the 1940-1942 period (Department of National War Services 1940; National War Service Regulations, 1940 (Recruits) sec. 15(1); Department of Labour 1942a; Department of Labour 1942b).

⁵ Specifically, an Order-in-Council made by the government in Ottawa would identify the age range of the individuals to be called, and then local National Registration officials would issue an explanation of their new governmental classification and what actions were now expected of them. These mobilization orders were passed through the post and the mobilization process was carried out in two main stages. The first involved National Registration Officials selecting individuals to be called and posting to them “Orders Medical,” requiring those selected to report to a local doctor within 3 days and receive a standardized medical exam. Once the results of this exam were received back by National Registration officials, the decision would then be made if the individual in question should still be called for military service. If so, a second “Order Military” was issued to the individual by post, informing them of their legal status as soldiers and of their requirement to report for Army training within a stipulated time period (National War Service Regulations 1940 (Recruits) sec. 9).

As noted above, this process of conscripting individuals relied heavily upon local discretion exerted by National Registration officials and their staff; however, changes to the mobilization legislation put forward in 1942 changed this significantly, placing the duties of the National Registration and mobilization system under the authority of the Department of Labour—vastly altering this discretionary focus (Canada Gazette (Extra) 1942). After 1942, decision making was highly centralized: taking up the practices and technologies of manpower accounting, statistical oversight and the flow of data within the system became highly regulated. As a result, the number of individuals that were pressed into service and took up positions as soldiers in the Army on a monthly basis increased nearly by a third—making the 1942-43 iteration of the National Registration and mobilization system significantly more effective in governing the lives and life chances of individuals classified by the government to be conscripted (Stacey 1970: 599-602).

The 1942 Shift and the Department of Labour

In taking on its new task of mobilizing men into the Armed Forces, the Department of Labour had been faced with the problem of how exactly to apply their own internal bureaucratic classifications regarding who was to be conscripted, somehow assert these categories outwards onto individuals and populations, and then finally have their classified individuals act in accordance with the rules and behaviours associated with their governmentally ascribed category. In particular, the new mobilization system needed to (1) take the “census type” data that had been collected as part of the nationwide National Registration of everyone living in Canada over the age of sixteen, (2) identify and sort out particular types of individuals for conscription into the Armed Forces, (3) classify them as “NRMA,”⁶ or conscript soldiers, and then (4) assert this new category upon populations of individuals.

If the 1940-1942 period was designed based on the maintenance of local authority and employee assessment of individual cases, the 1942-1943 period was organized around the idea of centralized management, oversight and control. Two major changes distinguish the 1942-1943 historical period from its predecessor. First, a significant shift in organization occurred—from one based on regional control under the District’s Boards and Registrars, to one which adopted a centralized management model in which decisions regarding the calling-up men were firmly held by officials working at the Department of Labour’s National Registration Head Office in Ottawa. Second, a significant shift in how data were managed and organized was implemented within the National Registration and mobilization system, which sought to establish a set, pre-determined, flow for mobilization data. In this way, these innovations more effectively structured the movement of individuals’ mobilization data, and asserted a set, predetermined path for targeted individuals’ data to follow and, as a result, worked to assert a form of “reactive path dependence,” a term which will be taken up in greater detail later in this paper, within the National Registration and mobilization system.

This shift, which placed mobilization under the direct authority of the Department of Labour, not only centralized information processing to officials in Ottawa, but also worked to shape social interactions at Division offices across the country, altering their work from one which required them to negotiate the complex legal and social requirements of mobilization to one in which they were now called on only to follow strictly delineated call-up practices. As a way of actualizing these changes in mobilization’s organization and policy, National Registration officials implemented two key new technologies: the “Accounting Card” or “Statistical Card” catalogue, to enable statistical oversight over the system; and the “Control Card” catalogue, which organized how data was managed and flowed at the Division level

⁶ Conscript soldiers were given a distinct “NRMA” classification, referring to the legislation of the *National Resources Mobilization Act* 1940 which legislated the act of mobilization. This classification was legally required since conscript soldiers could only be deployed in the defence of Canada and its territorial waters under the 1940 *Act*, and could not be deployed overseas.

(Department of Labour 1949: 121). As was noted by Head Office: “the Statistical Cards would be maintained in numeric sequence, as a whole,” giving the capacity for statistical oversight, “whereas the Control Cards would be divided into sections according to the stage in procedure that the man had reached,” producing a physical representation of how individuals were classified, and a set path for the cards to follow (Department of Labour 1943b). As was further explained to Division Registrars:

it will be obvious that the Statistical Section and the Control Card Section must work in close proximity so that both can handle the documents for their respective purposes, these two sections will supplement each other to a considerable extent. The Control Card will be filed in many different groups according to the present stage at which the card has arrived, whereas, the statistical cards will be in alphabetical order. No Statistical Card will be allowed to pass out of the hands of the Statistical Section and if they are in alphabetical order this will act as a cross index. It will then only be necessary to look at a Statistical Card to find out in what group of the Control Cards an individual’s Control Card may be found.

(Department of Labour 1943d; see also Department of Labour 1943e)

This new process had been developed after an analysis of practices with efficient National Registration Divisions in the 1940-1942 period. In some regional offices clerks had been given greater organizational leeway and had adopted the technologies of card catalogues and ledgers which were, at that time, tools often put to use to oversee and manage inventory within industry (Jones and Drews 1977). In addition, the Department of Labour had brought in staff from the Dominion Bureau of Statistics, whose expertise and experience was in the tabulation and generation of detailed statistics (Stacey 1970: 406; Department of Labour 1943a; Department of Labour 1943c). In this way, the new system drew on the technologies and expertise of statisticians from within government, and clerking procedures and technologies drawn from the private sector and industry.

When these card catalogues were implemented into the National Registration and Mobilization system “the result was so favorable and the improvement so great” that those who managed mobilization at the Department of Labour were reportedly “extremely well pleased” (Department of Labour 1943f). As these card catalogues were the central technological features of the 1942 shift, the remaining sections of this paper will take up each in detail, in order to demonstrate how they worked to change social relations within the National Registration and mobilization system.

The Accounting / Statistical Card and Statistical Oversight

When the mobilization system was redesigned in 1942 National Registration officials placed new emphasis on statistics and statistical oversight, “[ma]king] manpower accounting the basis of the Statistical reports which [wer]e sent to Ottawa” (Department of Labour 1943d). In developing this management-at-a-distance form of surveillance (see Giddens 1985: 14; Zuboff 1978; Botan 1996; Lyon 2002), focus was placed on technologies which enabled the coding of information regarding the functioning of the National Registration and mobilization program at the local level, and the communication of this information to those who held discriminating decision making authority now centralized at Head Office in Ottawa. In this way, greater attention could be focused on the details of how everyday work was being done at each stage within the National Registration and mobilization system, while the actions of local staff, and the numbers of individuals in the process of being mobilized, were rendered visible to those at Head Office and were now capable of being acted upon at a distance.

The new emphasis on centralized decision making and statistical oversight required a significant shift in how information was processed and flowed through offices at the local Division level. Specifically, the need for current and accurate statistics by Head Office in order to allow for discriminating decision

making required the adoption of a team of employees devoted solely to the production and maintenance of accurate and up-to-date statistics. In 1942, each Division office allocated a team of statistically focused clerical staff, making up what would later be referred to as the “Statistical Section.” All information and forms received by Division offices were now to pass through their newly established Statistical Sections first, as this section of each Division was now to act as the initial point of contact for *all* local mobilization data (Department of Labour 1943d).

With the establishment of the Statistical Sections also came the needs for: (1) a standardized means of recording the daily work of mobilization staff and the progression of the data of individuals identified to be mobilized, as well as (2) a need for a means of communicating these data to Head Office in Ottawa. Turning to the accounting technology of a ledger, the Statistical Sections employed the use of standardized forms, referred to as “Tabulation Sheets.” These single sheet ledgers were designed to capture and record data that was new or changing, as a means of maintaining up-to-date statistics of all goings-on at the Division level. Drawing on the technology of ledgers, the Tabulation Sheets tracked what work was done locally by noting the changes in the governmental classification or mobilization status of identified men. Specifically, these sheets included the technology of a “plus” column which worked to record the new classification into which individuals identified for mobilization were being processed—for example, a man having just received his medical exam being moved into the new medical categories of A1 (Department of Labour 1943g; see Figure 1). The sheet also carried the technology of a “minus” column which worked to note where the individual was classified before the change to their status had occurred. In this way, Tabulation Sheets enabled the real time validity of mobilization statistics while also integrating a capacity to oversee the step-by-step work of mobilization staff at the Division level into the daily collection and tabulation of statistical data.

As part of this statistical oversight, tabulation sheets distinguished fifty separate categories within the mobilization system and enabled the review and comparison of data along these lines. These categories included the number of individuals enlisted in the Armed Forces, those on Postponement, those within the unexpired window of an order-medical, those within the system’s specified Medical Classifications, those suspected of possible delinquency, those who had not yet been sent mobilization orders (including Aliens, Neutral, United States, Allied, Enemy, Chinese, Japanese and those holding specified ages and marital status), as well as those carrying “miscellaneous” classifications such as “in jail,” statutory exemptions, students, firefighters, persons with disabilities, conscientious objectors, outside of Canada and “far distant” (Department of Labour 1943h; see Figure 1).

In this way, Tabulation Sheets maintained a complete and real time record of all work conducted by the Divisions at the local level relating to these mobilization classifications of men, and maintained a record of the exact numbers of individuals that made up each category.

Now that a means of overseeing new data was put in place, attention turned to embedding a means of manpower accounting into the practice of calling-up men. More specifically, the primary function of this card system was to maintain a hard copy of all categorized individuals in order to provide a complete record of local registered individuals upon which to base the statistical oversight of the National Registration mobilization system. Whereas the Tabulation Sheet was focused on change, the Statistical Card catalogue was to create a static record of all registered individuals. As a result, the “Accounting Card,” or “Statistical Card,” catalogue was developed in which each individual’s data was entered onto a single card stock card. Though any changes in an individual’s mobilization status would be added to the card, the card itself would remain filed in the same spot in the same numerical order. In this way, the Statistical Card catalogue would enable “an actual manpower accounting [to be] undertaken which would show the exact classification of every man” (Department of Labour 1943 j).

Category			Tabulation Chart Line
Home Defence Army			1
Active	Army		2
	Navy		3
	Air Force		4
Postponements			5
Postponements Pending			6
30 Day Men not Previously Re-Called			7
Medical Category	A1		8
	A2		9
	B1		10
	B2		11
	C1		12
	C2		13
	D		14
	E		15
Notice Returned – Tracing			16
Notices Not Returned – Possible Delinquent			17
Unexpired Time Limit			18
Men Not Yet Sent Medical Notice	Aliens	Neutral	19
		United States	20
		Allied	21
		Enemy	22
	Chinese		23
	Japanese		24
	Age Groups Prior to 1902		25
	Single Men 1924		26
	Married Men 1905-11		27
	Married Men 1912-16		28
	Married Men 1917-23		29
	Others		30
	Miscellaneous	NPAM	
NFM 12 and Other Rejection Forms		32	
NFM 7 and Other Notices of Discharge		33	
Navy Discharges		34	
Air Force Discharges		35	
Ill		36	
Deceased		37	
In Jail		38	
Merchant Marine		39	
Statutory Exemptions		40	
COTC		41	
Student		42	
Fire Fighters		43	
Disabilities		44	
Conscientious Objectors		45	
Far Distant		46	
Outside Canada		47	
Others (Specified)		48	
Transfers from Other Divisions			49
New Registration Cards Received From National Registration Office Ottawa			50

Figure 1. Nested Categories Within the Monthly Summary 'Plus' and 'Minus' Entries, Derived from Monthly Tabulation Sheets (Form NSS(M) 49). NB – Department of Labour (1943i).

The Accounting Cards themselves contained a condensed account of an individual's registration information and were designed to enable the quick analysis of all of an individual's pertinent mobilization data. The bulk of the card was devoted to the individual's mobilization status, noting data regarding their medical classification, postponement and military training, while also containing an additional section

regarding any detected non-compliance, or “delinquency.” Additionally, the card noted the individual's allocated Serial Call number, as well as their Army Regimental Number after their enlistment. The personal National Registration information recorded on the space on the card was, however, quite limited, noting only the individual's name, original address which had been obtained during the National Registration of 1940, as well as their latest address, birthplace, subjecthood, racial origin and regular occupation (see Figure 2).

ACCOUNTING CARD

Administrative Division **C** Card

Name: _____ E.D. _____ P.D. _____ Date of Birth: _____

Original Address: _____ Birthplace: _____ Serial Call Number: _____

Latest Address: _____ Non British Subject: _____ Country of Allegiance: _____ Regimental Number N.R.M.A.: _____

Regular Occupation: _____ Unit or Corps: _____ Date of Enlistment: _____

Notice—Medical Examination

1. Date sent: _____ 2. Date sent: _____ 3. Date sent: _____

Reason Not Reporting

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Postponement

1. P.C. 1252. _____ 2. Farming. _____ 3. Fishing. _____ 4. Lumbering. _____ 5. Trapping. _____ 6. Mining. _____ 7. Other Essential and/or Seasonal. _____ 8. War Industries (include plan). _____ 9. Other Industries. _____ 10. Other. _____

MILITARY TRAINING

Reason for Not Reporting

1. Army. _____ 2. Navy. _____ 3. Air Force. _____ 4. C.O.T.C. _____ 5. IL. _____ 6. Merchant Marine. _____ 7. In Jail. _____ 8. Other. _____ 9. Notice Returned—Being Trained. _____ 10. Notice not Returned—Possible Delinquent. _____

Delinquents

1. Handed to Police. _____ 2. Located and complied with regulations. _____ 3. Located and prosecuted. _____ 4. Convicted (give sentence). _____

Non-British Subjects

1. Enlisted for service with armed forces of _____ 2. Find “first papers” and suitable for Can. Army. _____ 3. Find certificate of exemption schedule B. _____

Miscellaneous

1. Volunteered as Fire Fighter (date). _____ 2A. Called for Service with R.C.M.P. (date). _____ 2B. Reason for not reporting. _____

Figure 2. Accounting Card / Statistical Card, NSS (M) 37 (front and back). NB- Department of Labour (1943k).

The equipment for handling the Accounting/Statistical Card catalogue included a set of constructed wooden trays “18 [inches] in length, capable of holding about 1,500 cards” (Department of Labour 1943d). These trays were arranged on tables so that clerks could “sit opposite each other,” in such a way “that one row of trays on one side of the table would be handled by one clerk and another row on the opposite side of the table by another clerk” (ibid). The clerks “would have cards allocated to them according to the letters in the alphabet,” while any new “documents received in the [Statistical] Section would be passed from one clerk to another, each extracting the information pertaining to her particular cards” (ibid). Data regarding changes or updates to an individual's mobilization status was first made on the “Statistical Cards, then [was to be] pass[ed] on to the clerks who [we]re to enter them in the Tabulation Sheets” (ibid).

Not only did the Accounting Card catalogue work to provide a uniform structure for the internal recordkeeping of the Division offices, it also enabled the flow of information by greatly reducing the time and effort required to compile statistics. The ease of tabulation that the Accounting / Statistical Card and Tabulation Sheet technology offered also enabled a switch from quarterly to monthly statistical reports, quickening the response time and worked to provide much greater detail to Head Office than had existed before (Department of Labour 1943j). In this way, these technologies were fundamental in shaping the mobilization system's capacity to transmit both individual and aggregate information, and allowed for a form of centralized management and oversight by rendering visible and actionable the mobilization data of all registered individuals to those working within the system, in addition to how effectively National Registration and mobilization staff were adhering to Head Office's new mobilization policies.

The Control Card and Reactive Path Dependency

The second problem that the Department of Labour's new policy sought to address was that of ensuring that each and every individual identified to be conscripted was issued the necessary orders, and reported

for military training, as rapidly and efficiently as possible. To achieve this, a second card catalogue based on the technology of the “Control Card” was designed. Importantly this technology not only worked to manage mobilization data, but it also worked to organize how National Registration staff dealt with individual cases, shifting from each employee reviewing and deciding upon each individual case, to the adoption of a less individually negotiated structure which asserted a more “reactive path dependent” data management approach.

Within this paper “reactive path dependency” refers to historical sequences in which specific events work to set into motion predetermined “institutional patterns, or ‘event chains,’ that have deterministic properties” (Mahoney 2000: 507). In the adoption of this concept, focus is placed on what is defined as “path analysis”—the tracing of specific outcomes back to specific earlier social moments and then working to demonstrate that these events exist as “contingent occurrences,” or occurrences which are dependent for their existence upon earlier events. In this case study the outcome of conscription, or the issuance of orders given to specific men to take up positions as soldiers within the military, is traced back to earlier actions specifically related to the technological and organizational configurations within the National Registration and mobilization system. In particular, the technologies and organization of Division offices worked to assert a particular type of path dependence defined as “reactive path dependence” in which each step on the path to conscription existed largely as a reaction to the preceding step, and as a result created a condition in which “each event in the sequence [wa]s both a reaction to antecedent events and a cause of subsequent events” (Mahoney 2000: 526). As Mahoney (2000: 509, 526) notes: these “reactive sequences are chains of temporally ordered and causally connected events,” and are reactive in that “each step in the chain is ‘dependent’ on prior steps,” while “the overall chain of events can be seen as a path leading up to [a given] outcome.” As a result, these “sequences,” “paths,” or “chains” of events, can be seen as adopting the simple logic of “A leads to B, which leads to C, which leads to D” and so on (ibid: 526). Although the main innovation enabled by the Control Card catalogue was the capacity to sort the data of all registered individuals into the categories allocated to them within the mobilization process, the Control Cards themselves furthermore allowed for the re-organization of how work was done within registration offices, centring on the system’s allocated categories and establishing a set, progressive, path or data-flow through the various categorized stages of mobilization. As a result, this organization enabled the capacity to assert a path dependent trajectory for data, which worked to greatly diminish the mobilization staff’s processes of negotiation, which had previously existed as the foundation of the selection process in the pre-1942 historical period.

Each individual was allocated one Control Card and their personal information were filled in. On the Control Cards themselves “was shown only the essential data pertaining to changes in the man’s status with respect to the military call-up, as well as his last known address” (Department of Labour 1949: 122; see Figure 3).

Unlike the Accounting Cards, which were maintained in sequential order, Control Cards were designed to forward an individual’s classification and stage of progression within the mobilization process, allowing for the cards to physically represent an individual’s path through the various categorized stages of the process of mobilization.

NAME	SURNAME	SERIAL No.
PERIOD OF MIL. TRAINING:		CALL _____ MONTH _____
ADDRESS _____		POSTPONED UNTIL _____
MED. CAT.		BY BOARD _____
DATE OF REQUEST _____		BY DIV. REG. _____
WAR INDUSTRY _____		BY CLER. ERROR _____
COM'L " _____		BY MIL. DOCTOR _____
SEASONAL OCCUPATION _____		DATE OF POSTPONEMENT _____
ENTERED BY _____		
N.S.S.—M-4		

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Figure 3. Control Card, NSS M 4/ NSS (M) 53
NB- Department of Labour (1943k).

As was noted above, the real advantage that the Control Cards provided was “that the cards themselves [could b]e divided into sections and placed in specific trays in accordance with the stage the man ha[d] reached,” and that “a number of employees c[ould] work on these cards at the same time” (Department of Labour 1943l; see also Department of Labour 1943m; Department of Labour 1943d; Department of Labour 1949: 122). As a result of the adoption of Control Cards, the physical organization of National Registration offices changed to mirror the set pathways of mobilization policy, as the Control Cards were physically separated into trays which depicted the progressive stages of mobilization, while tables of these trays were to “be arranged in accordance with the flow of the cards, that is to say, the trays containing cards of men to whom ‘Orders Medical’ have not been issued [w]ould be at one end of the room and each other table placed in succession in accordance with the stage of operation reached, down towards the other end of the room to the last trays containing the cards of men rejected at the reception centers” (Department of Labour 1943m; see Figure 4). In accordance with this, the organization of staff changed from each member being charged with applying their own discretion as to if a particular individual was to be mobilized, to one in which each staff member was now allocated only one, stage specific, task related to mobilization. In this way, the data of individuals being called into service were organized in a new fashion, and now flowed through the various stages of the mobilization process along a distinctive and set chain of progression. At each stage, the classification on the card informed employees as to what action they were to take, informed them as to what the *next* step in the chain would be, and to what new tray the particular individual whose data they were working on’s Control Card was to be delivered. Now mobilization policy and the physical organization of Division offices set into motion individuals’ data and their physical Control Cards along pre-determined paths.

Under this new organization model, Control Cards were kept in thirteen separate trays and maintained within these trays in numerical order. As such, the Control Card system incorporated a “hierarchical classification model” (see Mayr and Bock 2002), in which the entries were arranged in a hierarchical series of nested classes, with similar or related classes at one hierarchical level being subdivided into more exclusive classes at the next lower level. In this way, the Control Cards would flow logically along the mobilization system’s predetermined paths from the initial stage of being selected as eligible for mobilization, at the higher, more generalized level of categorization, on to the lower, more specific,

classifications such as the various medical fitness categories, and finally to the individual's ultimate mobilization classification of "NRMA soldier" or being "unfit for service" (Mayr and Bock 2002: 176).

As is shown in Figure 4, the highest order of classification divided the trays into two groupings, separating the cards of those who were currently a part of the mobilization system's mandate of "men within the specified age range" and "availability" (Grouping 1), from those who were outside of this scope (Grouping 2). Grouping 1 was then divided into three lower subsections containing: (A) the "cards of men to whom an Order-Medical Examination had not been sent;" (B) the "cards of men to whom an Order-Medical Examination ha[d] been sent;" and (C) the "cards of men who ha[d] taken their medical" exam (Department of Labour 1943I).

The (C) cards, consisting of those who had already received their medical exam, were further sub-classified into (1) men assigned to medical categories "A" and "B"; and (2) those assigned to medical categories "C" and "D"—"A" referring to men categorized by doctors as part of their required medical exam as being the most fit, down to "C" and "D" which referred to lower medical fitness categories.

The cards of men in categories "A" and "B" were then further separated into three groups: (a) containing the "cards of men for whom no application for postponement⁷ had been received"—this group constituting "those available for ordering out for military training;" (b) the "cards of men who ha[d] made application for postponement but whose application ha[d] not been disposed of by the Board;" and (c) the "cards of men who ha[d] been postponed" (Department of Labour 1943I).

The Control Card system further subdivided those for whom no application for postponement had been made, into two categories: (a) containing "the cards of men whom Order-Military Training has been issued"—which were "to be checked against the Nominal Roll⁸ returned by the district depot or training center and the names of those men who ha[d] failed to report [we]re to be transferred to the tracing department for necessary action;" while (b) included the "cards of men who ha[d] reported for military training and ha[d] been rejected by the district depot or training center" (Department of Labour 1943I).

The latter category, consisting of rejected individuals, was further separated into: (i) "the cards of men rejected as medical categories 'B' and 'C'," which were "to be kept separately in special trays so that they [could] be recalled should the Army specifically state that they ha[d] lowered their standards and they w[ould] accept for training all men in either or both of these categories;" (ii) "the cards of men rejected as category 'D'" which were "kept in a special tray in accordance with the period of unfitness so that they may be recalled for military training at the expiry of such period"; (iii) the "cards of men rejected as category 'E' [we]re to be placed in the man's file—his case being closed;" and (iv) "the cards of men who have been taken on strength are to be placed on the man's file, his case being closed" (Department of Labour 1943I).

The cards of those on postponement were also subdivided into three groups consisting of: (i) the "cards of men who have been postponed until further notice;" (ii) the "cards of men who have been granted the ordinary temporary postponement ... divided in accordance with the expiry date of the postponement;" and (iii) the "cards of men who have been granted postponement as conscientious objectors" (Department of Labour 1943I; see Figure 4).

⁷ Postponement refers to a specific mobilization classification which protected individuals from being conscripted into the Armed Forces. Individuals needed to apply for Postponement and mobilization officials then assessed these individuals to determine if they were "necessary" for their community. If found necessary, these individuals were granted a "Certificate of Postponement," which would then last for a predetermined length of time.

⁸ Nominal Rolls were lists of names of men used to list match with other lists and record inconsistencies in government held data.

Grouping 1					Control Card Trays
A) Order Medical Examination has <u>not</u> been sent					1.A
B) Order-Medical has been sent					1.B
C) Men who have taken their medical	1. Medical Categories “A” and “B”	a) No application for postponement received	a) Order Military issued		1.C.1.a.a
			b) Men rejected for training	i) Categories “B” and “C”	1.C.1.a.b.i
				ii) Category “D”	1.C.1.a.b.ii
		b) Application made but not decided upon			1.C.1.b
		c) Those on Postponement	i) until further notice		1.C.1.c.i
			ii) for set period		1.C.1.c.ii
	iii) as Conscientious Objectors		1.C.1.c.iii		
	2. Medical Categories “C” and “D”*				1.C.2
Grouping 2					
1. Cards of Students without medical examinations					2.1
2. High ranking men in the Reserve Army					2.2
3. Other Classifications – Aliens, Outside the country etc.					2.3

Figure 4. Control Card Sorting Trays

NB – Department of Labour (1943I). Medical Categories "A" - "D" make reference to the category allocated by doctors as part of the medical examination required prior to mobilization as part of the National Registration and Mobilization system. * This tray was further subdivided in 1943 in order to accommodate data from the Order-Medical Re-Examination program.

Grouping two trays were to include: (1) "the cards of students for whom no medical examination [wa]s on hand because they are COTC or other training unit"—which were "to be reviewed regularly so as to ascertain that they continue to fall within the student classification;" (2) "the cards of men in the Reserve Army of the rank of those to whom no Order-Medical Examination should be sent under the regulations," but whose cards would be retained "so that they will be available should the Army desire to have them ordered out;" and finally (3) the cards of those in "every other classification of men which may arise from time to time and upon whom the Registrar may wish to have control, such as, amongst others, card groupings for aliens, for men who have been granted permission to leave Canada etc." (Department of Labour 1943I).

As a means of ensuring the accuracy of the Control Card system, the cards of men whose cases were closed—those that had died, voluntarily enlisted, had been rejected as medical category "E", had been discharged from the service, or who had been referred to the Alternative Service Officer—were removed from the system and placed within the individual's local Central Registry file along with their Questionnaire Card and any other collected documents (Department of Labour 1943I).

The trays holding the classifications of Control Cards were to be constructed of "Binder's Board" or light wood, designed to fit the 6 inch by 4 inch Control Cards and be "no more than 15 inches in depth so that they could be placed back to back across the width of [the] 34 inch table[s]" (Department of Labour 1943m). This design was adopted in order to place "three or four [trays] at each table, so as to leave enough space in the center for two operators to work opposite each other with a set of trays on each side" (ibid). The Control Card tray tables were then to be arranged so that the higher, more generalized categories were placed on one side of the room, and the lowest categories were placed on the other (ibid). In this way, Control Cards were to follow a set, highly regulated, path dependent, course, from the issuance of an Order-Medical Examination to the individual's enrolment in the Army (see Figure 5).

Figure 5. Control Card Flow Chart 1943

Each individual was, in this way, allocated a classification, and their relative position within the system was monitored for compliance with governmental policy by both Divisional employees and by Head Office—the statistical system rendering visible both registered individuals and the work being conducted by mobilization staff.

In addition to speeding up processing times, the implementation of new technologies and a new organizational structure also enabled better oversight of individuals classified to be mobilized, as it allowed staff to focus on a smaller, more manageable number of segregated cases. In particular, officials noted how this dissolution into separate trays denoting the individual's classification worked to enable an efficient means of distinguishing their mobilization status, but also preformed an important oversight and statistical function as well, by being capable of "giv[ing] at any time complete information as to the number of men in each category" (Department of Labour 1949: 122). Specifically, Control Cards enabled the Control Department to perform an additional process of verification for cases of postponement, and rendered visible those men in the medical categories of "A" and "B" who remained available to be called up (Department of Labour 1944). In the case of those sent Orders-Medical or Military, their Control "Cards [we]re to be reviewed regularly so that the names of those men for whom no medical [wa]s received after a set time may be turned over to the tracing department" (Department of Labour 1943). Additionally, the Control Cards in the postponement trays were divided "in accordance with the expiry date of the postponement," so that mobilization officials would readily know those whose postponements were to expire," and finally the cards of conscientious objectors were now easily "made available to the Alternative Service Offer upon request" (ibid).

As a result of the Control Card catalogue being implemented, each employee was now allocated a specific point on the mobilization path, and their actions regarding the individual cases they were working on was mediated by specific rules relating to how data at their particular stage was to be treated, and where it was to progress to—making each step in the progression now reliant upon the previous one, in that it informed how the individual's data was to be addressed at the current moment and where the case was to progress, in this way asserting a reactive path dependent relationship (Mahoney 2000: 509, 526).

Conclusion

As a result of Canada's WWII mobilization technologies, over 150,000 individuals who had no desire to be soldiers were pressed into service in the Armed Forces (Stacey 1970: 599-602). For these individuals, being a soldier and the subsequent training, discipline, deployment, combat, killing, and, in some cases, their death, came as performances imposed onto them by a system of surveillance and governance. In addition to demonstrating the historical application and effectiveness of surveillance technologies to the problems of conscription in wartime Canada, this paper demonstrates a link between the implementation of specific types of surveillance technologies and the capacity to govern populations. Although other forces—such as the pressures exerted by the government to conscript more men, and those asserted largely from English Canada regarding the desire to have all Canadians be forced to do their part for the war effort—would certainly have played a role in the actions taken by mobilization officials, demands placed on the mobilization system to increase throughput and get more soldiers into uniform still *required* a mechanism that could enable this increase to occur. Ultimately this paper concludes that it was the adoption of new technologies and the re-organization of National Registration and Mobilization offices in 1942, that allowed for the development of particular techno-social relationships within these spaces, that in turn, not only allowed greater throughput by mediating the actions of staff, but also resulted in an observable change in the number of men that took up the role of conscript soldiers. As this case study has shown, two themes emerge as the key technological and social components that worked to enable the mobilization system to assert its categories onto its target populations: the first, that the implementation of a highly detailed and up-to-date statistical set of manpower accounting technologies worked to enable the centralization of decision making at Head Office in Ottawa; and the second, that the Control Card catalogue and its supporting technologies worked to develop a kind of reactive path dependence within the means in which individuals' data were processed.

In addressing the first point, the technology of the Statistical/Accounting Card catalogue and the Tabulation Sheets did work to enable Head Office to receive new, detailed, and actionable information from local Division offices, allowing them in the post-1942 period to oversee and effectively manage the multitude of actions made within the mobilization system from their position in Ottawa. Much has been written regarding the capacity of surveillance technologies to enable the management or governance of populations at a distance (see Giddens 1985; Zuboff 1998; Botan 1996; and Lyon 2002), and evidence from this case study further supports these claims. In addition, this paper also works to provide grounded empirical evidence that affirms the existence of these types of relationships in regards to pre-electronic technologies as well. In particular, this paper demonstrates the capacity to use statistical information as a means to effectively mediate social relations within work spaces, and across distances, even before these same types of data became digitized and incorporated into more contemporary forms of electronic monitoring within workplaces (Ball 2010; Ball and Wilson 2000; Sewell 2012). This work, however, also more importantly links this form of governance—at-a-distance to this paper's second insight regarding reactive path dependence and the linking of governance to specific forms of data flows.

As was noted above, the second theme that emerges from this history is the development of a kind of automated, coded, chained together, or "path dependent" response to an individual's data within the National Registration and mobilization system. Although the past works of authors such as Lessig (1999), Timmermans (1996), and Lianos (2012), have each hinted at this type of relationship between coding,

classification and the organization of social behavior, this paper stresses the importance of the links established between categories, objectification, subjectification, and the institutional enforcement of very specific sets of data progressions along pre-established paths. Within this case study, the Control Card catalogue exemplifies this relationship, as it established a protocol and technology in which at each step, each card, in each filing cabinet or tray, not only spoke to the particular overall progression to be followed, but also worked to assert a singular classification that was to be expressed in the current moment. As such, each step within the card's progression carried with it rules and requirements to be taken up by designated actors across the mobilization system, and additionally, these technologies worked to assert the tightness of the system's applied categories through the adoption of, and adherence to, a formalized series of steps, or events, that were set in a linear progression along a pre-determined, reactive, path dependant course. In this way, the implementation of the Control Card catalogue importantly shifted social relations within National Registration and mobilization offices in two key ways—first, by asserting more detailed and specific explanations as to how staff were to react to mobilization data; and second, by enabling a more individualized form of oversight and management.

By asserting a high degree of reactive path dependence within mobilization policy, the formalized use of individual discretion by Division officials and their capacity to negotiate the specific nature of each individual's case became severely limited after the changes made in 1942. Under this model, the positioning of the data of an individual identified for mobilization within the system's many trays and files, organized what actions staff were to take, and in turn worked to enable individual accountability for the clerks charged with the management of mobilization data at any given stage. Furthermore, accountability for the functioning of mobilization became much less diffused across the system, as post-1942 policy and the development of more detailed statistics exposed mobilization officials to a more individualized, segmented and manageable section of held data. Finally, this technology also worked to enable the system's effectiveness to be internally audited, again developing the system's capacity to enforce staff adherence to its new internal policies and working to further assert path dependency in the progression of mobilization data.

In this way, mobilization after 1942 was no longer a relationship to be negotiated by mobilization staff, but instead existed as a series of steps to be followed, and a process to which specific individuals, both staff and those identified to be mobilized, could now be made accountable. In this case study, the system's techno-social design directed employees to interpret individuals through: (1) their classifications, (2) how this classification related to their current stage in the mobilization process, and (3) what their classification meant in relation to the predetermined progression of internal mobilization stages. In bringing the insights of this paper forward into contemporary times, this empirical evidence points to an important relationship between specific surveillance technologies and governance, while also asserting the importance of the need to further investigate these factors and the roles that they play within currently implemented systems of surveillance. In wartime Canada the impact of these technologies was significant, having shaped the lives and life chances of young men from across the country. For registration officials "the result was so favourable and the impact so great" from the changes brought in 1942, though others may have characterized these technologies differently (Department of Labour 1943f).

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