Exhibit P-45

UNIVERSITY OF CALGARY

Uncharted Territory: Psychosurgery in Western Canada, 1935-1970

by

Brianne M. Collins

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

DEGREE OF DOCTOR OF PHILOSOPHY

GRADUATE PROGRAM IN PSYCHOLOGY

CALGARY, ALBERTA

JANUARY, 2020

Chapter 2

No Longer "the Cinderella of Medicine": Psychiatric Identity and the Introduction of Somatic Therapies in the 1930s

In his 1940 annual report, A.T. Mathers (1941)—Manitoba's Provincial Psychiatrist—summarized the work of the Division of Psychiatry for the preceding year. Amidst his survey of aggregated patient population data and a brief overview of the work of the province's institutions, Mathers penned the following statement: "Psychiatry has gone a long way to establishing itself, not as the Cinderella of Medicine, but as an accepted member of the medical family. Any step that furthers this highly desirable objective, will redound to the benefit of all" (p. 150). While such a statement may, at first glance, seem relatively innocuous, or even out of place in an annual report, it served an important rhetorical function. Mathers' comment, which can be read as an explicit defense of the psychiatric enterprise, reveals both historical insecurities of a profession attempting to prove its legitimacy and a justification for an emerging "culture of experimentation" amidst troubling hospital conditions (Dyck & Deighton, p. 130).

Mathers' (1941) defense of psychiatry was rooted in a long and complicated history that has been articulated in careful detail elsewhere (e.g., Grob, 1994; Shorter, 1997). Central to this history was the asylum and the role of those who cared for patients within its walls. In his history of American medicine, Paul Starr (1982) suggested that "The mental asylum created not only a new institutional market for doctors, but also a new sphere in which they could exercise authority" (Starr, 1982, p. 72). Psychiatrists overseeing these institutions—originally called alienists—demonstrated their control over their dominion in the 19th century most notably

through moral treatment discussed briefly in the previous chapter.[16] However, moral treatment became increasingly difficult to deploy as alienists were forced to face the sheer chronicity of mental illness coupled with burgeoning patient populations that overshadowed initial beliefs "that mental disorders, if identified early and treated promptly, were curable" (Grob, 1994, p. 103). Eventually, "mental hospitals shifted from therapeutic to custodial functions [and] psychiatry became primarily an administrative rather than a medical specialty" (Starr, 1982, p. 73). This became an unwanted legacy that haunted the field of psychiatry well into the 20th century.

Not surprisingly, psychiatrists in western Canada were not immune to, and had to actively combat, such perceptions like their counterparts in the United States and Europe. One example can be found in an annual report written by British Columbia's H.C. Steeves (1924):

> As Mental Hospitals are too frequently looked upon by the uninformed as places for custodial care, and one frequently hears the assertion that nothing is being done for the patient, I will go into some detail as to the results of treatment during the year… (p. P 10)

It is clear that both Steeves and Mathers were acutely aware that in order to convince others that their specialty was a legitimate medical sub-field, psychiatrists needed to demonstrate that they were capable of actively and effectively treating mental illness (Braslow, 1997).

Not only were psychiatrists in western Canada, as elsewhere, waging a professional battle, they were also contending with the constraints brought about by social, political, and institutional circumstances that had compounded over the preceding decades. As elucidated in

[16] For detailed histories pertaining to the history of asylums and moral treatment, see the work of scholars such as Jennifer Bazar (2013), Andrew Scull (1989), Anne Digby (1985), Ian Dowbiggin (1997), David Rothman (1971), and Nancy Tomes (1994).

the previous chapter, many of these factors—including overcrowding, conservative social welfare spending, and the impact of the First World War and Great Depression—fostered conditions that left hospital physicians and administrators desperate for solutions. Such desperation collided with the nihilism that had long plagued the discipline of psychiatry (Pressman, 1998; Raz, 2013). It is in this space that four somatic therapies—of which psychosurgery was one—would become attractive treatment options for a discipline eager for professional recognition and in the absence of concerted efforts from provincial governments to meet the needs of the institutionalized mentally ill.

Although other scholars have previously identified these lines of argumentation (e.g., Grob, 1994; Shorter, 1997; Braslow, 1997; Pressman, 1998; Dyck & Deighton, 2017), Dyck and Deighton (1997) are among the few who have pursued them within the western Canadian context in their monograph detailing the history of the mental hospital in Weyburn, Saskatchewan. Yet, they provided limited details about the somatic therapies that were actually used at Weyburn. Thus, this chapter is intended to further their work beyond Weyburn to the broader western Canadian context. Herein, I argue that the somatic therapies were readily taken up by physicians in most mental hospitals in the west based on their allure as being a "step that furthers this highly desirable objective" as Mathers (1941) suggested (p. 150). This chapter, then, recounts the arrival of the four somatic therapies in each of the western provinces. To accomplish this task, I begin by describing what Dyck and Deighton (2017) called the "culture of experimentation" and the treatments that pre-dated the introduction of the somatic therapies of the 1930s (p. 130). Then, I discuss the arrival of insulin shock therapy and Metrazol shock therapy in the latter half of the 1930s when the provinces were still reeling from the Great Depression. Next, I explore the additional constraints and challenges posed by the Second World War and the commencement of

electroshock therapy during that time. Finally, I detail the adoption of psychosurgery during and after the Second World War across the western provinces.

"A Culture of Experimentation": Treatment Prior to the 1930s

Although the therapeutic aspirations of psychiatrists had dwindled heading into the first decades of the 20th century, the introduction of malarial therapy—described in Chapter 1—revitalized "hopes that other physiologically oriented cures for psychiatric conditions were within reach" (Pressman, 1998, p. 157).[17] Yet, a physical understanding of mental illness did not begin with malarial therapy; instead, Shorter (1997) has argued that a biological understanding of mental illness had long been present in the discipline and had merely waxed and waned throughout its history. A notable phase in this history occurred, according to Braslow (1997), "With the decline of moral therapy in the second half of the nineteenth century and the rise of a more somatically based model of psychiatric disorder" (p. 34). This resulted in "the patient's body rather than his or her mind or environment bec[oming] an increasingly important site of therapeutic intervention" (Braslow, 1997, p. 34). Accordingly, there were other physical treatments in existence prior to the introduction of malarial therapy including "numerous drugs with which to calm and sedate patients" such as bromides and paraldehyde (Braslow, 1997, p. 36). By the 1920s, North American and European psychiatrists had experimented with a host of other existing and emerging physical treatments including laxatives, tooth extraction, colectomies, and barbiturate sleep therapy (Shorter & Healy, 2007).[18] Physical restraint and

[17] For more on malarial therapy and its connection to biological psychiatry, see Chapter 1 as well as other histories produced by Braslow (1997) and Shorter (1997). For a critical history of malarial therapy, see Warren (2000).

[18] See Andrew Scull's (1987) coverage of focal infection theory and the tooth extraction work carried out by Henry Cotton. For information on the use of more invasive operative techniques, see Wendy

hydrotherapy had also been used for some time as therapeutic agents, though Braslow (1997) has argued that such practices skirted the line between treatment and discipline.

The attitude of psychiatrists towards these varied treatments and the necessity of attempting them was captured well in a letter written by A.D. Campbell (1937a), the superintendent at Weyburn, in March of 1937. In his response to a request originating in Latvia regarding information on the treatments in use in Canada, Campbell explained:

> I think we are all anxious to adopt any scientific treatment that would be of any assistance to us in sending these people out into the world again and I think it can be taken for granted that in any up-to-date institution no line of treatment is neglected that has been demonstrated by experience as a successful line of treatment… (p. 1-2)

Thus, the many therapies experimented with into the 1930s demonstrated the intersection between effective treatments capable of reducing patient overpopulation and psychiatry's ambition to project itself as an authentic medical specialty. And, as Campbell articulated, any treatment with possibility would be explored.

Signifying these ongoing and varied attempts to actively treat patients rather than simply house them, a host of experimental practices appeared in annual reports from western Canadian mental hospitals—typically under the heading of clinical work, medical work, or treatment. These attempts included those already mentioned above and in the previous chapter, such as hydrotherapy (e.g., Crease, 1937; G.A. Davidson, 1935; Mitchell, 1926), occupational therapy (e.g., Cooke, 1926; Mathers, 1931; Mitchell, 1925; Steeves, 1926), malarial therapy (e.g., Cooke,

Mitchinson's (1982) work on the use of gynecological operations on women in Ontario and Richard Noll's (2011) account of Bayard Taylor Holmes's attempt to treat his son's dementia praecox via surgical intervention of the digestive system. Noll (2007) also previously discussed Kraepelin's organotherapy, autointoxication theory, and the surgical procedures taken up in America in the early 20th century.

1926; Crease, 1932a), and sterilization (e.g., MacEachran, 1935), as well as others like electrotherapy (e.g., Mitchell, 1925). Even auxiliary or consulting services, such as X-Rays (e.g., Crease, 1936b; G.A. Davidson, 1935; Mitchell, 1925; Pincock, 1935), laboratory and pathology services (e.g., Baragar, 1931a; Crease, 1932b), social service departments (e.g., Baragar, 1931a; Crease, 1932b), and the services offered by dentists (e.g., Baragar, 1931a) seem to have constituted part of a holistic approach to treating mental and physical illness. At Weyburn, for instance, the superintendent reported on the work of the X-Ray department in 1925 saying that the "work is of great assistance to the doctors in diagnosis, and we are now using the machine in treatments, we are getting some remarkable results" (Mitchell, 1925, p. 92). Ultimately, the notion that psychiatrists, like other medical practitioners, could prescribe a host of treatments—physical and otherwise—bolstered their enterprise.

Psychiatrists were further encouraged by the emergence of four new and bold somatic therapies in the 1930s—insulin shock therapy, Metrazol shock therapy, electroshock therapy, and psychosurgery (Bellak, 1948; Valenstein, 1986; Grob, 1994).[19] The first three, collectively known as the shock therapies, induced a state of physiological shock and/or convulsions in the body by administering a pharmaceutical agent or applying electrical current (Braslow, 1997; Shorter & Healy, 2007). According to Braslow (1999b), "Insulin differed the most from the other two treatments in that it actually produced a state of physiologic shock but no seizures, while Metrazol and electricity produced grand mal seizures or convulsions but no physiologic shock"

[19] It is worth noting that these four somatic therapies were not the only ones experimented with during the 1930s despite the fact that they have been the most commonly referenced in both the primary and secondary literature. Other substances were attempted as forms of shock treatment including ammonium chloride, coramine, and triazol (Stainbrook, 1946; Bellak, 1948). Electronarcosis, nitrogen inhalation, and intravenous injections of the neurotransmitter acetylcholine were also employed for a time (Bellak, 1948).

(p. 234). “With the arrival of the shock therapies,” explained historian Jack Pressman (1998), “a profession that had been known for its ‘nihilism’ became giddily engaged in developing an extensive array of specialized treatments” (p. 157). In the case of psychosurgery, an especially targeted, neurosurgical approach to the treatment of mental illness was employed. All four, however, would become integral to treating patients in western Canada to greater and lesser degrees.

Insulin Shock Therapy

After its discovery in the early 1920s, insulin was used to treat diabetes but also experimented with in other contexts and with other ailments (Shorter & Healy, 2007). Shorter and Healy (2007) explained that “In psychiatric clinics it was mainly given to undernourished patients to encourage appetite” (p. 11). Inducing hypoglycemic shock by administering insulin in cases of schizophrenia and psychosis was also experimented with in the late 1920s and early 1930s in various European countries (Shorter & Healy, 2007). However, Viennese psychiatrist, Manfred Sakel, was credited with introducing insulin shock therapy for the treatment of schizophrenia (e.g., Easton, 1938).[20] In 1927, Sakel had been using insulin to treat cases of

[20] There were some minor variations in the names used for some of these treatments. While both “insulin coma” and “insulin shock” therapy have been used interchangeably in the literature (e.g., Valenstein, 1986; Braslow, 1997; Shorter, 1997), Sakel (1936) initially used the term “insulin shock treatment” (p. 835; Braslow, 1997). This is also the term that tended to be used in British Columbia (e.g., Crease, 1938), Saskatchewan (e.g., Campbell, 1939), and Manitoba (e.g., Barnes, 1938). In Alberta, however, “insulin therapy” was the more common term used in annual reports (e.g., R.R. MacLean, 1939a, p. 91), though in retrospect was often referred to as “insulin coma therapy” (e.g., “Historical notes – A.H.P.,” n.d.). Alternative terminology used within the global psychiatric community included “hypoglycemic shock” (e.g., Beiglböck & Dussik, 1938) and “insulin-hypoglycemia treatment” (e.g., Cameron & Hoskins, 1937).

opiate addiction; however, one of his patients also had schizophrenia, which seemed to improve after going into an insulin shock. It was this experience that led Sakel "to treat schizophrenics simply because he felt they were otherwise hopeless" (Shorter & Healy, 2007, p. 15). Over the course of the next five years, Sakel applied this method on 150 cases and first published his results in 1933 (Easton, 1938), inaugurating a new era of somatic therapy in psychiatric medicine.

In the January 1936 edition of the *American Journal of Psychiatry,* Sakel (1936) published an account of insulin shock as a treatment for schizophrenia. Along with briefly describing how he discovered the treatment, he outlined the treatment process:

> It consists essentially of the production of consecutive daily shocks with very high doses of insulin; these occasionally provoke epileptic seizures, but more frequently produce somnolence or coma, accompanied by profuse perspiration—in any case a clinical picture which would ordinarily be alarming. The patient may show sudden improvement after the first shock, but more often there is a gradual improvement after a series of shocks. (p. 830)

Sakel (1936) also admitted the possible danger inherent in this type of treatment, though he maintained that properly trained personnel and preparedness to quickly administer an injection of glucose mitigated the risk. He then provided a detailed case description of an aggressive and violent patient admitted to his clinic in August of 1934 who underwent the treatment and, by September of 1936, was reportedly back working as a physician.

Even before Sakel published his 1936 article, the treatment had already caught the attention of physicians elsewhere in Europe and in North America. According to Kolb and Vogel's (1942) survey of 305 hospitals—including state, federal, city, county, and private

institutions—insulin shock therapy began in the United States in 1935. In recounting their use of the treatment beginning in March of 1936 at Worcester State Hospital in Massachusetts, Cameron and Hoskins (1937) explained that Sakel "claimed exceptionally high recovery rates" when he introduced his treatment in 1933 (p. 1246). Other work conducted in Switzerland, Hungary, and Czechoslovakia, however, had also reportedly supported Sakel's claims. It should not be surprising, then, that Canadian psychiatrists would follow fairly quickly in the footsteps of their US counterparts given that high chances for recovery would have been attractive to physicians eager to manage ballooning patient populations and remediate their professional reputation.

In eastern Canada, it is not entirely clear when and where insulin shock was first introduced. In Ontario, a review of the annual reports suggested that Ontario Hospital, New Toronto was the first to launch the treatment in the province on May 31, 1937 (Collins, 2012). However, in his annual report up to October 31, 1936, E.C. Menzies (1937b), the superintendent at The Provincial Hospital in Saint John, New Brunswick, provided some indication that they were beginning to experiment with a new treatment likely to be insulin shock; though, it is not clear whether it was experimented with prior to the end of 1936 or early into 1937 when the report was written. According to investigative journalist, D.M. Le Bourdais (1947d), the treatment had been used in Nova Scotia beginning in 1937. In the case of Quebec, Perreault (2012) mentioned that insulin shock had been used on patients at Montreal's Saint-Jean-de-Dieu psychiatric hospital; however, a definite date for the commencement of the treatment was not provided. In O'Brien's (1989) history of the Waterford Hospital in Newfoundland, it was confirmed that insulin shock was used at the hospital, but no indication was provided for when the treatment began. Thus, without more definitive historical evidence, it is difficult to assess

which eastern province was the first to employ the new therapy. However, it is possible to trace the beginning of insulin shock in western Canada.

While Alberta had been the first to introduce malarial therapy in western Canada (see Chapter 1), Manitoba was the first to employ insulin shock. According to E.C. Barnes (1939b), the superintendent at Selkirk, the first patients were treated in November of 1936. It would take almost another year, however, for the mental hospital in Brandon to begin using the treatment the following October (Pincock, 1940). Physicians at the Winnipeg Psychopathic Hospital claimed that "Conditions at this hospital [were] not very favorable for Insulin Therapy," and instead implemented Metrazol shock therapy (Mathers, 1939d, p. 90). Consequently, pending more information from eastern Canada, Manitoba may, in fact, have been the first province in Canada to begin using insulin in the treatment of mental disease.

From the beginning, the efficacy of insulin shock was assessed with cautious optimism by physicians in Manitoba. In the annual report where the treatment was first mentioned, Barnes (1938) summarized their foray into using this new somatic therapy in this way:

> Though some gratifying and encouraging results have been secured, it is felt that it is all too early to offer any definite conclusion as to the value of this method… Results justify a continuance of our investigation of the method and the claims for it advanced by its sponsors. (p. 68)

The promise of this treatment clearly must have outweighed the added burden it placed on Manitoba's mental hospitals given Premier Bracken's residualist political agenda discussed in the previous chapter. The Provincial Psychiatrist did indeed comment in the 1938 annual report that the treatment was costly in terms of staff requirements and acquiring adequate supplies. He also indicated that the treatment came with risks, evident in two deaths during the fiscal year that

were attributed to it (Mathers, 1939c). Yet, professional legitimacy was at stake, and pressure to relieve overcrowding through patient discharge or through lessening the burden of chronic cases was a key measure of success. "The results," explained the Provincial Psychiatrist, "continue to be sufficiently encouraging to warrant continuance. Recovery rates have been bettered and average stay in hospital distinctly lessened. The gain, from a variety of standpoints, requires no argument" (Mathers, 1940, p. 32).

Saskatchewan was the next western province to commence insulin shock treatment. At the hospital in North Battleford, the first series—consisting of eight patients evenly divided between the sexes—was treated in April of 1937 (Davison, 1938). According to the superintendent, J.W. MacNeill (1939), they did so "following the practices outlined by Sakel" and, although they attempted to reserve judgment as to the treatment's success, they felt "encouraged with some of [their] cases where the prognosis was not encouraging" (p. 77). Meanwhile at Weyburn, a physician on staff had been corresponding with E.C. Menzies in Saint John regarding obtaining case reports from their experiences in New Brunswick. In a letter dated April 7, 1937, Menzies (1937a) indicated that "Our results so far fully justify the time and trouble that we took in introducing these treatments. We will send along a case report in a day or so" (para. 3). A reply followed several weeks later when Menzies was sent a letter thanking him for providing "very full case reports…on Hypoglycaemic Shock Treatment" (Assistant Superintendent, 1937, para. 1). Although it is not clear exactly which month the treatment was first attempted at Weyburn, Campbell's (1939) annual report indicated that it began during the 1937 fiscal year (ending April 30, 1938), though treatment had been "confined to the male side of the institution and included a number of patients treated at the urgent request of relatives, some of these people having been inmates of the institution for quite a number of years" (p. 85).

On the west coast, insulin shock treatment was piloted at BC's Essondale hospital in June of 1937, a few months after it was first used at North Battleford (Hamilton, ca. 1938; Crease, 1938). In his annual report to the Provincial Secretary, A.L. Crease (1938) credited the commencement of the treatment to an established practice of "sending the doctors away for postgraduate study" (p. V 10). Specifically, "a member of the staff [had] been sent to a distant point to learn the technique" (Hamilton, ca. 1938, p. 23). By the end of the year, it was reported that "a special ward [had been] set aside for this purpose in which twenty patients [were] given the insulin shock treatment and, on completion of their treatment, twenty more [took] their places" (Crease, 1938, p. V 10). Crease (1938) recounted that the results were "encouraging," but more time was needed to make any particular conclusions (p. V 10).

Finally, in the case of Alberta, the treatment was initially begun at Ponoka "early in the summer" of 1937 before "it had to be discontinued due to the presence of the epidemic of acute entero-colitis in the hospital" (R.R. MacLean, 1939a, p. 90). Before the end of the year, they began offering the treatment yet again. Despite the challenge of pursuing this new form of therapy on account of understaffing (R.R. MacLean, 1939a), a dedicated unit for insulin treatment was opened according to a hospital history written by retired staff (Johnson et al., 1986). The initial series of patients treated were composed of 20 cases diagnosed with schizophrenia who were selected from the wards housing chronic patients. This is how the superintendent, R.R. MacLean (1939a), communicated their preliminary findings:

> Results, on the whole, were not considered particularly good, but this was attributed to the fact that unsuitable cases were used. It is expected that better results will be obtained as time goes on and the more hopeful cases are given the treatment. (p. 90)

The following year, however, R.R. MacLean (1939b) remained hesitant to conclude that the results were much better on the next 18 patients, despite the fact that more suitable cases had apparently been selected. Yet, by 1939, he claimed that the results were "encouraging" especially "in the early cases" (R.R. MacLean, 1941b, p. 110). In regard to the Provincial Mental Institute in Edmonton, it is not entirely clear if, and when, insulin shock was adopted; however, the superintendent, W.J. McAlister (1939b), first reported in 1938 on "the use of 'shock' therapy in a series of cases," which could have referred to insulin, Metrazol, or both (p. 114). Given that McAlister (1939a) regularly urged the management of the Mental Health Division to transform the hospital from "a custodial institution…with little or no facilities for active therapeutic work" to an active treatment centre alongside Ponoka (p. 115), it is likely that it was Metrazol rather than insulin shock that was commenced that year, as the former was easier and safer to administer than the latter (Shorter & Healy, 2007).

While certain psychiatrists in western Canada were more cautious than others about the prospect of insulin shock, there was evidence that it offered hope for alleviating the overcrowded conditions and providing a previously stagnant discipline something active they could do to treat mental disease. To this point, the following observation regarding the potential of insulin (and Metrazol) shock therapy at Brandon was made by a physician on staff:

> The work was commenced in an atmosphere of fresh enthusiasm and optimistic hope and we feel that no better recommendation can be offered for the success of the venture than to say that this enthusiasm and optimism has been obtained at a high level. (Pincock, 1941, p. 159)

The value of the shock therapies in bolstering the profession of psychiatry was shared by others outside of Canada as well. Vaczy Kragh (2010), in his history of insulin and Cardiazol treatment

in Denmark, observed that "shock therapy also played an important role for psychiatrists trying to enhance the status of psychiatry and increase the funding for mental hospitals" (p. 343). It is not surprising, then, that physicians in western Canada were eager to incorporate these treatments for the hope they offered to patients, institutions, and the profession more broadly.

Metrazol Shock Therapy

The second of the well-known somatic therapies of the 1930s was first introduced to the medical community not long after Sakel published his initial results with insulin shock. Working independently of Sakel, Ladislaus von Meduna, a hungarian neuropathologist, had been pursuing the hypothesis that "epilepsy and schizophrenia antagonized each other" in his research in the late 1920s (Shorter & Healy, 2007, p. 25). The rarity of epilepsy among those diagnosed with schizophrenia supported his assertion (Shorter & Healy, 2007). This eventually led Meduna to attempt to bring about convulsions in patients with schizophrenia in 1934 via intramuscular injection of a natural substance called camphor (Bellak, 1948; Braslow, 1999b; Shorter & Healy, 2007). He then moved on to "a synthetic soluble camphor preparation known chemically as pentamethylenetetrazol… known in the United States as Metrazol and in Europe usually as cardiazol…" (Bellak, 1948, p. 251). Initially used to treat schizophrenia, this form of shock therapy was soon prescribed for other mental disorders (e.g., Cheney, Hamilton, & Heaver, 1941). As Braslow (1999b) explained, Metrazol shock was more appealing to physicians than Sakel's insulin shock because "…an individual Metrazol treatment was easier to administer, required less observation, took much less time, and produced fewer complications" (p. 235). This was not the case for patients, however, who were "subject[ed] to a period of extreme anxiety"