

ARTICLE

‘A transverse scar on the neck’ – psychosomatic approach in the differential diagnosis and surgical treatment of hyperthyroidism in post-war Finland

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Abstract

In the Finnish medical discussion during the middle decades of the twentieth century, the challenging differential diagnostics between hyperthyroidism and various neuroses was perceived to yield a risk of unnecessary surgical interventions of psychiatric patients. In 1963, the Finnish surgeon Erkki Saarenmaa claimed that ‘the most significant mark of a neurotic was a transverse scar on the neck’, a result of an unnecessary thyroid surgery. The utterance was connected to the complex nature of thyroid diseases, which seemed to be to ‘a great extent psychosomatic’. Setting forth from this statement, the article aims to decipher the connection between hyperthyroidism, unnecessary surgical treatment and the psychosomatic approach in Finnish medicine. Utilising a wide variety of published medical research and discussion in specialist journals, the article examines the theoretical debate around troublesome diagnostics of functional complaints. It focuses on the introduction of new medical ideas, namely the concepts of ‘psychosomatics’ and ‘stress’. In the process, the article aims to unveil a definition of psychosomatic illness that places it on a continuum between psychological and somatic illness. That psychosomatic approach creates a space with interpretative potential can be applied to the historiography of psychosomatic phenomena more generally. Further inquiry into the intersections of surgery and psychosomatics would enrich both historiographies. It is also argued that the historical study of psychosomatic syndromes may become skewed, if the term ‘psychosomatic’ is from the outset taken to signify something that is all in the mind.

Keywords: Psychosomatics; Stress; Functional symptoms; Thyroid disease; Diagnosis; Surgery

Introduction

Deciding about diagnosis and treatment always entails a certain degree of uncertainty. This commonplace notion becomes more noteworthy when it is associated with radical treatments such as surgery.¹ The risk of unnecessary surgeries is a recurring topic in the historiography of medicine, as well as in today’s medical discussions.² In the post-war Finnish medicine, hyperthyroidism, the overactivity of the thyroid gland causing heightened metabolism, was a problematic disease easily confused not only with other internal diseases, but also with various neuroses. Ultimately, the challenge of differential

¹Harry Collins and Trevor Pinch, *Dr. Golem: How to Think About Medicine* (Chicago: University of Chicago Press, 2005), 14–5, 62–4.

²Well-known historical examples of uncertainty in surgical interventions include surgical treatments for hysterics during the nineteenth century; the removal of tonsils to prevent infections as well as radical mastectomy to prevent and treat breast cancer. See Andrew Scull, *Hysteria: The Disturbing History* (Oxford: Oxford University Press, 2009), 77–81, 88–92; Gerald Grob and Allan Horwitz, *Diagnosis, Therapy, and Evidence: Conundrums in Modern American Medicine* (New Brunswick: Rutgers University Press, 2010), 57–83 and Barron Lerner, *The Breast Cancer Wars* (New York: Oxford University Press, 2001), 3–14. Recently, the role of surgery in treating acute appendicitis has been called into question. Paulina Salminen *et al.*, ‘Five-Year Follow-up of Antibiotic Therapy for Uncomplicated Acute Appendicitis in the APPAC Randomized Clinical Trial’, *Journal of American Medical Association*, 25, 12 (2018), 1259–65.

diagnostics was to determine, whether functional symptoms had a psychogenic or an organic origin. Since surgery persisted as the principal remedy for hyperthyroidism from the 1930s to the 1960s, misdiagnosis constituted a risk of unnecessary surgical therapy. In 1963, in a study of nearly two thousand thyroid surgeries, the Finnish surgeon Erkki Saarenmaa (1909–67) wrote about the issue as follows:

There were periods in Finland when, judged in retrospect, surgery can be said to have gone astray... [Earlier] confusion prevailed with regard to certain neurotic and climacteric symptoms which may indeed bear resemblance to those mild forms of genuine thyrotoxicosis. Such excessive surgical activity called forth justified criticism, a pointed expression of which might be found in the saying that ‘the most significant mark of a neurotic was a transverse scar on the neck’.³

Saarenmaa brought attention to a medical puzzle: the similarity of thyrotoxic and neurotic symptoms. To his mind, discovering the cause of the ailment should precede therapy, otherwise the operating surgeon would become a ‘charlatan’. Yet, the risk of ‘exaggerated therapeutic enthusiasm’ was genuine in the case of thyroid diseases, which were ‘to a great extent psychosomatic’.⁴

In order to understand the connection between hyperthyroidism, unnecessary radical treatment and the ‘psychosomatic’ as discussed in Saarenmaa’s statement, this article examines the introduction of the psychosomatic concept to the Finnish medical discussion on hyperthyroidism during the post-war years. Based on published medical research and discussion in specialist journals, the article aims to explore and explain the rise of psychogenesis theories and medical holism concerning said disease.⁵ The term ‘psychosomatic’ encompassed the idea of mind–body interaction. It is still a contentious term in medicine, and inevitably, in the historiography of medicine. Pointing to the multiple meanings of the concept, the editorial in a recent edition of *Medical Humanities* noted that the value of the ‘psychosomatic’ becomes apparent when it is not approached ‘as the name for a (new) medical model – that is, as the answer to a range of clinical and scientific puzzles – but rather as an indicator of an underlying problematic itself’.⁶ In other words, the term ‘psychosomatic’ is more useful for depicting a problem (mind–body dualism) than it is to providing a solution. However, from the historical perspective, the problem-solving aspect of psychosomatic approach should not be downplayed. In this article, I argue that the psychosomatic concept was appealing in a particular historical context, because it could be used to address a contemporary medical puzzle, diagnosing functional complaints.

In the historiography of medicine, goitres, enlargements of the thyroid gland that show on the outside as swollen necks, are usually associated with an underactive thyroid and cretinism (a congenital iodine deficiency syndrome, which causes stunted mental and physical development).⁷ This is quite natural, since severe forms of hypothyroidism and associated goitre constituted a central health issue in many countries in the nineteenth and twentieth centuries.⁸ In Finland, goitre was first described in the medical

³Erkki Saarenmaa, *Systematics of the Diseases of the Thyroid Gland in Clinical Surgery* (Stockholm: Acta Chirurgica Scandinavica, suppl. 314, 1963), 6–7.

⁴*Ibid.*

⁵On the definitions of holism, see eg. Christopher Lawrence and George Weisz, ‘Medical holism: the context’, in C. Lawrence and G. Weisz (eds), *Greater than the Parts: Holism in Biomedicine 1920–1950* (New York: Oxford University Press, 1998), 1–22. In this volume, both psychosomatic medicine and laboratory science are discussed as forms of holistic thought. See Jack D. Pressman, ‘Human understanding: psychosomatic medicine and the Mission of Rockefeller Foundation’, in C. Lawrence and G. Weisz (eds), *Greater than the Parts: Holism in Biomedicine, 1920–1950* (New York: Oxford University Press, 1998), 189–208 and Allan Young, ‘Walter Cannon and the physiology of fear’, in C. Lawrence and G. Weisz (eds), *Greater than the Parts: Holism in Biomedicine, 1920–1950* (New York: Oxford University Press, 1998), 235–56.

⁶Monica Greco, ‘Biopolitics, Psychosomatics, Participating Bodies’, *Medical Humanities*, 45, 2 (2019), 103–6, 104.

⁷See eg. Roy Porter, *The Greatest Benefit to Mankind* (London: Harper Collins Publishers, 1997), 563–4.

⁸See eg. Michael B. Zimmermann, ‘Research on Iodine Deficiency and Goiter in the 19th and Early 20th Centuries’, *The Journal of Nutrition*, 138, 11 (2008), 2060–3; Hans Bürgi, Zeno Supersaxo and Beat Selz, ‘Iodine Deficiency in Switzerland One Hundred Years After Theodor Kocher’s Survey’, *Acta Endocrinologica*, 123 (1990), 577–90; Howard Markel, ‘“When it rains it pours”: Endemic Goiter, Iodized Salt, and David Murray Cowie, MD’, *American Journal of Public Health*, 77, 2 (1987), 219–29.

literature in the nineteenth century, and in a short time, it was recognised as an endemic disease, especially in Eastern Finland.⁹ At the turn of the twentieth century, when Finnish physicians became interested in thyroid pathologies and set out to investigate the prevalence of myxoedema (severe hypothyroidism) and cretinism, they discovered that hypothyroidism with goitre was comparatively rare in the country.¹⁰ In the 1920s, the Finnish goitres were associated with the opposite form of thyroidal dysfunction, which seemed to be a unique feature of the Finnish goitre problem. The sporadic lack of iodine in the different geographical areas caused nodular goitres, which were particularly prone to develop hyperthyroidism.¹¹ At this time, the other common form of hyperthyroidism, Basedow's or Graves' disease, was clinically difficult to separate from 'toxic nodular goitres'. Consequently, the term 'thyrotoxicosis', literally meaning the excess of thyroid hormone in the body, was used for both conditions, as it emphasised the similar symptoms rather than the still hypothetical differences in aetiology.¹² In Finland, like in many Western countries, the threat of thyroid diseases motivated an iodine-based means of prevention, which intended to ward off the heart invalidism caused by long-standing cardiac symptoms related to the condition.¹³ The Finnish idiosyncrasy, the high prevalence of toxic nodular goitres, made the differential diagnostics between thyrotoxic complaints and neurotic ailments topical in the medical discussion.

The symptoms of hyperthyroidism are mostly functional, including tiredness; sweating; warm, moist skin; increased appetite and weight loss; tachycardia; nervousness and sleeplessness; tremor; dyspnoea and muscular weakness. One might expect that combined with this set of symptoms, a goitre would be a tell-tale sign of hyperthyroidism. Yet, as was recognised already by contemporary physicians, goitres are often *not* connected to disturbances in the production of thyroid hormones, and therefore, it is quite common that the only symptom caused by a goitre is the swelling of the neck and the subsequent compression on the trachea. *Vice versa*, not all thyrotoxic patients have goitres.¹⁴ Since the disease shared a number of features with neuroses, the disease entity of hyperthyroidism proved to be hard to pin down throughout the period examined here.¹⁵ The differential diagnostic difficulties shed light on the reasons why hyperthyroidism was reframed as a psychosomatic illness during the 1950s. As the historian Alexa Geisthövel has argued regarding the introduction of the psychosomatic concept to German medicine, the disturbances diagnosed as neuroses brought together psychosocial and somatic factors of morbidity.

⁹Jaakko Ignatius, 'Lääketieteet', in P. Tommila (ed.), *Suomen tieteenhistoria 3* (Helsinki: WSOY, 2000), 570–607, 589–92.

¹⁰H. K. Holck, 'Myxoedema-tapaus', *Duodecim*, 25, 11 (1909), 419–43, 419–20; Lempi Kena-Apajalahti, *Studien über Myxödem bei Kindern* (Helsinki: University of Helsinki, 1933), 5–6.

¹¹Johannes Wahlberg, 'Kliniska strumatyper i Sydfinland', *Finska Läkaresällskapets Handlingar*, 71 (1929), 533–6, 534–5. In the Finnish case, the initial lack of iodine apparently led to the formation of hyperactive nodules in the thyroid gland, which reacted easily to changes in iodine supply.

¹²Today, it is known that Basedow's disease is caused by an autoimmune inflammation of the thyroid, whereas toxic nodular goitre results from a lack of iodine, which inhibits the production of thyroid hormones. On the different forms of hyperthyroidism, see Robert Welbourn, *The History of Endocrine Surgery* (New York: Praeger, 1990), 24, 36–7, 47–9. The multifaceted processes behind hyperthyroidism and goitres kept their aetiology nebulous well into the 1960s and even questioned the validity of iodine prevention. See eg. Bror-Axel Lamberg, *Kupukaula on jo menneisyyttä: Struuman historiaa Suomessa* (Helsinki: Suomen tiedeseura, 2003), 55–62.

¹³Auli Suojanen, *Suomalaista ravitsemuspolitiikkaa vuosina 1939–1999* (Helsinki: Suomen tiedeseura, 2003), 31–3. For contemporary references, see National Nutritional Committee, *Tutkimuksia kansanravitsemustilan parantamiseksi* (Helsinki: Valtioneuvosto, 1940), 327–32. On factors that generally complicate state-level iodine prevention, see eg. M. Miles, 'Goitre, Cretinism and Iodine in South Asia: Historical Perspectives on a Continuing Scourge', *Medical History*, 42, 1 (1998), 47–67.

¹⁴Pertti Mustajoki, 'Struuma (suurentunut kilpirauhanen)', in *Terveyskirjasto – Duodecim*, electronic resource, accessed 7 January 2021.

¹⁵Since the article focuses on the disease identity of hyperthyroidism, I have gathered the neurotic ailments under an umbrella term 'neurosis'. In the research material, I have commonly encountered diagnostic categories of neurasthenia and *dystonia neurocirculatoria* (neurocirculatory asthenia). Other diagnoses or terms included *neurosis vasomotorica*, *constitutio nervosa*, *exhaustio nervosa*, neurosis; neuropathia, anxiety neurosis, heart neurosis, psychoneurosis, hypochondriasis and psychogenic neurosis.

In this sense, the categories of neurosis preceded the concept of psychosomatic illness added the possibility of organic changes due to chronic malfunction of an organ.¹⁶

The differential diagnosis between neuroses and hyperthyroidism reveals the problematic disease identity of hyperthyroidism, situated in the borderland of psychiatry, internal medicine and surgery. According to the historian Thomas Schlich, biopathological processes in 'soft' disease identities (psychiatric and psychosomatic illnesses) are unproven and unprovable, whereas in the 'hard' disease identities (eg. endocrine diseases), these processes have eventually been unveiled. He further argues that biopathological processes do not naturally construct disease identities, while also somatic illnesses should be seen as products of cultural, social and scientific negotiation.¹⁷ The medical debate on whether hyperthyroidism was a psychosomatic illness underlines that in historical inquiry, the distinctions between soft and hard disease identities are sometimes arbitrary. In the past, functional symptoms have been diagnosed as both organic and psychiatric, which makes this notion ever-more pertinent.¹⁸ The fluidity of functional complaints created a groundwork for the psychosomatic interpretation of hyperthyroidism, but as will be shown in the following sections, this was not to say that the illness was, to quote Edgar Jones and Simon Wessely, 'medically unexplained'. Therefore, this article aims to unveil a definition of psychosomatic illness that places it on a continuum between psychological and somatic illness. It was how the word 'psychosomatic' was used in the Finnish medical discussion, and I argue that these shifting connotations should be recognised in the history of psychosomatics more generally.

A diagnostic borderland – the peculiar amalgam of hyperthyroidism and neurosis

In their modern histories, endocrine disturbances have been associated with the nervous system, and for a long time, hyperthyroidism, too, was speculated to result from an underlying neurosis.¹⁹ However, as the historian Erwin Ackerknecht has noted, the nineteenth century theories about the psychogenic origin of illnesses were rooted in ignorance, and entailed hopes that scientific discoveries would eventually render the idea of psychogenesis needless.²⁰ Indeed, the advances of endocrine research suggested a connection between metabolism and the thyroid gland in cases of myxoedema and Graves' disease in the late nineteenth century.²¹ The development coincided with the general increase in surgical possibilities, which fostered an organ-specific view of hyperthyroidism. The new frame of interpretation was also applied to the Finnish goitre problem. In 1913, the Finnish pioneer of thyroid surgery, Eino Sandelin, recounted the neurosis theory of hyperthyroidism anecdotally as a part of the early history of

¹⁶Alexa Geisthövel, 'Neurose oder eine vielgestaltige Diagnose zwischen Körper, Psyche und Gesellschaft', in A. Geisthövel and B. Hitzer (eds), *Auf der Suche nach einer anderen Medizin: Psychosomatik im 20. Jahrhundert* (Berlin: Suhrkamp, 2019), 45–59, 45–6, 58–9.

¹⁷Thomas Schlich, 'Changing Disease Identities: Cretinism, Politics and Surgery (1844–1892)', *Medical History*, 38, 4 (1994), 421–43, 422–3.

¹⁸See eg. Edgar Jones and Simon Wessely, 'War Syndromes: The Impact of Culture on Medically Unexplained Symptoms', *Medical History*, 49, 1 (2005), 55–78, 56, 78 and Joel D. Howell, "'Soldier's Heart": The Redefinition of Heart Disease and Specialty Formation in Early Twentieth-Century Great Britain', *Medical History*, 29, suppl. 5 (1985), 34–52.

¹⁹See eg. Edward Stainbrook, 'Psychosomatic Medicine in the 19th Century', *Psychosomatic Medicine*, 14, 3 (1952), 211–27, 224.

²⁰Erwin Ackerknecht, 'The History of Psychosomatic Medicine', *Psychological Medicine*, 12 (1982), 17–24, 21. It should be noted that although neuroses of the turn of the twentieth century entailed a variety of somatic symptoms that were connected to nervousness, they were not psychosomatic in the modern sense, as neuroses were thought to ultimately stem from the dysfunction of the (physiological) nervous system. Ralph Harrington, 'On the Tracks of Trauma: Railway Spine Reconsidered', *Social History of Medicine*, 16, 2 (2003), 209–23; Minna Uimonen, *Hermostumisen aikakausi: neuroosit 1800- ja 1900-lukujen vaihteen suomalaisessa lääketieteessä* (Helsinki: Suomen historiallinen seura, 1999), 195.

²¹Arthur Hughes, 'A History of Endocrinology', *Journal of the History of Medicine and Allied Sciences*, 32, 3 (1977), 292–313. On the history of endocrinology, see Victor Medvei, *A History of Endocrinology* (Lancaster: MTP Press, 1982) and Merriley Borell, 'Organotherapy, British Physiology, and Discovery of the Internal Secretions', *Journal of the History of Biology*, 9 (1976), 235–68.

understanding thyroid pathology, and agreed with the thyroïdal aetiology of Basedow's disease (*Morbus Basedowii*).²²

In a parallel development of the early twentieth century, the rise of endocrinology and physiologist Walter Cannon's studies regarding the physiological changes connected to emotions, such as fear and rage, brought light to the processes that could underlay neurotic symptoms.²³ Similarly in Finland, the nervous theories were gradually supplemented (but not replaced) with chemical findings. In the first half of the twentieth century, the endocrine conceptions remained subordinate to the prevailing constitutional medicine postulating that inherited qualities regulated the upsurge of both physical and mental illness. A 1934 study from the Helsinki Surgical Clinic asserted that an inherited 'nervous lability' could be the reason why some goitres became toxic.²⁴ Neurotic and thyrotoxic constitutions thus could be closely entwined.

Separating hyperthyroidism from neurosis nosologically did not break the association between the illnesses, but instead gave rise to a hazy diagnostic borderland. Neurosis and hyperthyroidism became enmeshed in a way that obscured causal relations. In 1928, the leading figure of Finnish thyroid studies, Johannes Wahlberg (1895–1951),²⁵ opened his speech in a meeting of the Finnish Surgical Association with a telling statement that the scope of the term 'thyrotoxicosis' ranged from actual Basedow's disease (*Vollbasedow*) to those neuroses that exhibited signs of a changed endocrine function.²⁶ In the Anglo-American medical discussion during and after the First World War, the combination of nervous and circulatory symptoms with no apparent organic lesion was hypothesised to be caused by many factors, including thyroïdal hyperfunction.²⁷ Along these lines, Wahlberg noted that functional nervous complaints had gone by the name of 'soldier's heart' or 'effort syndrome' during the First World War, and were then often initially diagnosed as 'heart failure' or 'thyrotoxicosis'. The symptoms of incipient thyrotoxicosis were 'fully similar to [functional, nervous] aggravation', and especially in neurotics, connected to 'psychic emotion' or 'physical strain'.²⁸ The differential diagnostic issues therefore originated partly from that the difference between mild hyperthyroidism and neurosis was unclear.

Goitre, which was a certain sign that some kind of adaptive process was in progress in the thyroid gland, offered a tangible reference point to physicians struggling with the borderline cases of hyperthyroidism. The downside was, as Wahlberg put it, that neurotics with an 'inclination to tachycardia, a weak resistance to physical and psychological strain and elevated irritability and tremor often had a diffuse, colloid goitre'.²⁹ Furthermore, hyperthyroidism did not have a steadily worsening course, but the severity of symptoms fluctuated.³⁰ Underdeveloped diagnostic technologies piled on the existing challenges. The only viable diagnostic test for hyperthyroidism was the basal metabolic rate (BMR), which measured body's use of oxygen and thereby the level of metabolism. The problem of this test was

²²Eino Sandelin, 'Om strumektomi, särskildt vid Morbus Basedowii', *Finska Läkaresällskapets Handlingar*, 55 (1913), 424–46.

²³Ben Shephard, *A War of Nerves: Soldiers and Psychiatrists 1914–1994* (London: Pimlico, 2002), 112–3. For more on Cannon, see eg. Otniel Dror, 'The Affect of Experiment: The Turn to Emotions in Anglo-American Physiology, 1900–1940', *Isis*, 90, 2 (1999), 205–37.

²⁴Jorma Lindgren, *Über die Genotypischen Faktoren der Thyreoten Konstitutionsanomalie* (Helsinki: University of Helsinki, 1934), 23.

²⁵Wahlberg was a docent in internal medicine at the University of Helsinki in internal medicine 1930–5, and in 1950, he was granted a personal professorship in endocrinology. He made several study trips abroad and introduced to the Finns new innovations, such as thyrostatics in the latter part of the 1940s. Some of his studies achieved a near classic status. Lamberg, *op. cit.* (note 12), 36.

²⁶Johannes Wahlberg, 'Tyreotoksikoosien hoidosta', *Duodecim*, 44, 1 (1928), 50–67, 50.

²⁷See eg. Charles Wooley, 'From Irritable Heart to Mitral Valve Prolapse: World War I, the British Experience and James Mckenzie', *The American Journal of Cardiology*, 57 (1986), 463–6; Charles Wooley, 'From Irritable Heart to Mitral Valve Prolapse: World War I – The U.S. Experience and the Origin of Neurocirculatory Asthenia', *The American Journal of Cardiology*, 59 (1987), 1183–6 and Howell, *op. cit.* (note 18).

²⁸Johannes Wahlberg, 'Om thyreogena hjärtstörningar', *Finska Läkaresällskapets Handlingar*, 70 (1927), 525–34, 530.

²⁹*Ibid.*, 530.

³⁰Wahlberg, *op. cit.* (note 26), 51–3.

that it was susceptible to many external error sources.³¹ Therefore, the clinical experience had a pivotal role in determining a diagnosis.

The medical idea of ‘toxic nodular goitre’, adopted from the American physician Henry Stanley Plummer working at the Mayo Clinic, raised the status of surgery as the principal remedy for thyrotoxic patients. As Wahlberg established in 1929, Finnish goitres were mostly nodular, entailing small adenomata instead of a diffuse enlargement.³² Iodine, used both as a treatment for and a preventive measure against goitre, would therefore run a heightened risk of iodine-induced Basedow’s disease (*Jodbasedow*).³³ Surgery, on the other hand, evaded this and relieved thyrotoxic symptoms by reducing the amount of thyroid tissue. The reasons for adopting the cutting therapy were largely practical – proving thyrotoxicosis was challenging, but surgery based on a well-founded suspicion could be helpful.³⁴ In the history of endocrinology, manipulating glands themselves had proven to be an effective means to alter hormone production.³⁵ The surgical therapy of the thyroid gland remained in the kernel of Finnish treatment of hyperthyroidism until the 1960s, giving rise to a near paradigmatic assumption that a diagnosis of hyperthyroidism equalled a need for surgical intervention.

Consequently, neurotics with an incidental goitre were ‘the first in line’ when it came to deciding whether a person should be treated with a strumectomy. In 1938, Wahlberg addressed the risk of operating on neurotics in his influential monograph, a classic of Finnish thyroid studies. Wahlberg had an enthusiastic attitude towards the advantages of surgical treatment and, for the most part, did not seem to worry whether the diagnosis leading to an operation was accurate. He asserted that ‘fortunately, the compression goitre places on the trachea is often enough to indicate a strumectomy, which also relieves the alleged thyrotoxicosis’. The histological samples obtained this way could be studied post-operatively for future diagnostic reference.³⁶ Up to one third of Wahlberg’s patient material experienced a tracheal pressure that was ‘not in line with objective clinical findings’. Wahlberg described the phenomenon with ‘an illustrative, although “unmodern” term, *globus hystericus*’.³⁷ Nervousness therefore confounded the compression symptom, which could be the principal indication for surgery.

It was recognised across Europe that the risks of thyroid surgery ranged from thyrotoxic crisis (a sudden, yet transitory, worsening of hyperthyroidism) all the way to psychosis.³⁸ The enthusiasm for surgical treatment regardless of the risks might have stemmed from the zest that often accompanies new therapies, especially surgical therapies, which during the interwar years, still had a ‘cure-all’ character.³⁹ Strumectomy was no exception, but its utility nevertheless had its limitations. Juxtaposed with, for instance, the practise of lobotomy that started in Finland in 1946, it is critical to note that thyroid surgery was not intended to cure mental illness.⁴⁰ Sometimes, strumectomy did make the patient feel better, but

³¹Welbourn, *op. cit.* (note 12), 38. The pulse rate, body temperature and cholesterol levels were also often measured.

³²Wahlberg, *op. cit.* (note 11), 534–5.

³³Iodine-induced Basedow’s disease had been observed in Europe in the early attempts to treat and prevent goitre with iodine. This history haunted the idea of iodine prevention and warned against its implementation in Finland. Fabian Langenskiöld *et al.*, ‘Lausunto struuman ennakkoehkäisystä Suomessa’, *Suomen Lääkärilehti*, 15 (1936), 60–1.

³⁴Unto Uotila, ‘Kilpirauhasprobleemoja’, *Duodecim*, 52, 2 (1936), 120–7; Pauli Soisalo, ‘Blood Iodine and Thyroid Function’, *Acta Medica Scandinavica*, 133, 3 (1949), 186–209.

³⁵Since the turn of the nineteenth and twentieth centuries, the strumectomy was partial in nonmalignant cases, because the removal of the whole thyroid gland led to myxoedema. I. D. Vellar, ‘Thomas Peel Dunhill, the Forgotten Man of Thyroid Surgery’, *Medical History*, 18 (1974), 22–50, 24–6, 29–33.

³⁶Johannes Wahlberg, *Studien über die Schilddrüsenkrankheiten in Finnland* (Helsinki: University of Helsinki, 1938), 246.

³⁷*Ibid.*, 66–7.

³⁸See eg. Torsten Sandelin, ‘Strumaoperationens faror och komplikationer’, *Nordisk Medicin*, 3, 9 (1941), 201–4; Othmar Häuptli, ‘Zur Operation der Struma, des Morbus Basedowi und der Hyperthyreose’, *Acta Societatis Medicorum Fennicae Duodecim B*, 31, 1 (1941), 62–72, 63 and H. Welti, H. Baruk and Y. Mathey, ‘Diagnosticque des troubles psychiques basedowiens et des syndromes mentaux d’apparence thyroïdienne’, *La Presse Médicale*, 46, 52 (1937), 1036–8.

³⁹Porter, *op. cit.* (note 7), 600–2; Grob, *op. cit.* (note 2), 57, 82–3.

⁴⁰Lobotomy was practised in Finland from 1946 to the late 1960s, during which time the amount of surgeries reached a total of at least 1 550. Ville Salminen, ‘Lobotomia psykiatrisena hoitomuotona Suomessa’, *Historiallinen Aikakauskirja*, 109, 1 (2011), 48–59.

other times, his or her mental state worsened considerably. To underline this point, Wahlberg described a psychological casualty, who was ‘nervous’ already before the operation, but developed a severe paranoid depression afterwards.⁴¹

Strumectomy evolved between the late nineteenth century and 1945 from a potentially fatal procedure into a task that the surgeon ‘should be able to perform under 40 minutes’, and started to resemble tonsillectomy in its routine-like and unexciting character.⁴² Yet, in the 1940s, the excess surgeries were increasingly perceived as a problem in search of a solution. In the scarcity of resources during the Second World War, the need for all surgeries was carefully evaluated especially in military medicine.⁴³ When it came to the risk of unnecessarily operating on neurotics, the contemporary worry about neurotics as ‘shirkers’ attempting to avoid military service coincided with the diagnostic conundrum of hyperthyroidism.⁴⁴ In 1944, the current chairman of the Finnish Surgical Association Martti Hämäläinen (1886–1962) stated in a meeting of the society that neurotics, who just happened to have goitre, were commonly sent to him during the trench war phase of the Finnish–Soviet Continuation War (1941–4). With this group, it was ‘sometimes overwhelmingly difficult’ to decide whether they should be operated on or not. In particular, Hämäläinen brought up surgery indications made by nonspecialist doctors:

The referring doctor... unless he is a specialist, would do better, if he sent this kind of patient to the war hospital only to be examined... and did not, to avoid disappointments, say anything about a surgery. It is certainly a known fact that a neurasthenic would gladly give up any organ whatsoever, except maybe the eyes, once they are given the idea that their illness will get better with surgery. But I still want to emphasise that differential diagnosis may be difficult, or even impossible.⁴⁵

The quote illustrates how the patient’s psychopathological urge to receive surgical treatment coincided with doctors’ lack of expertise. Only a trained eye would think to pay attention to the ‘stiff, staring and anxious look’, the ‘pounding and percussive function of the heart’ as well as the ‘constant psychological hypertension’ that were supposed to differentiate thyrotoxic patients from the neurasthenic ones.⁴⁶

Importantly, it can be argued that the experiences of war altered the surgeons’ approach towards psychological factors in illness. The historian Tracey Loughran has described the British surgeon Millais Culpin’s turn towards psychological medicine after the First World War to argue that the rise of ‘psychological modernity’ was diffusely prevalent across specialties, not only as the increased prominence of psychiatry and psychology. Very much resembling the experiences of Hämäläinen, Culpin realised during his service as a surgeon that many abdominal symptoms were ‘associated with psychological upsets, not with diseases that could be verified with the naked eye’.⁴⁷ The same was true for hyperthyroidism, with the added complication that the ‘naked eye’ could be deceptive.

⁴¹Wahlberg, *op. cit.* (note 36), 200.

⁴²Theodor M. Scheinin, ‘Kirurginen sairaala 1925–1975’, in M. Turunen and T. Kalima (eds), *Suomen Kirurgiyhdistys 50* (Vammala: Suomen kirurgiyhdistys, 1975), 45–76, 67–69; For more about why these ‘mundane’ stories are valuable for the history of surgery, see Louis Dwyer-Hemmings, ‘“A Wicked Operation”? Tonsillectomy in Twentieth-Century Britain’, *Medical History*, 62, 2 (2018), 217–41.

⁴³Johannes Heinonen, ‘Tilastotietoja Viipurin Sotilassairaalan toiminnasta vv.1927–1939’, *Sotilaslääketieteellinen Aikakauslehti*, 15, 5 (1940), 174–82, 179.

⁴⁴The historian Ville Kivimäki has described the complex attitudes towards psychiatric illness during the Finnish Continuation War, also making remarks about ‘target-oriented’ neuroses. Ville Kivimäki, *Battled Nerves: Finnish Soldiers’ War Experience, Trauma, and Military Psychiatry, 1941–44* (Turku: Åbo Akademi, 2013), 288–95, 380–91.

⁴⁵Martti Hämäläinen, ‘Struumapotilaiden hoito, leikkausindikaatiot ja palvelukelpoisuus’, *Duodecim*, 60, 11 (1944), 569–606, 569, 571–2. All translations from the Finnish, Swedish and German sources are by the author of the present article.

⁴⁶*Ibid.* The eye symptoms Hämäläinen described are now known to result from thyroid eye disease, in which fibrosis can develop around extraocular muscles and extracellular matrix builds up around the eyes causing them to protrude (exophthalmos). A ‘staring’ look could therefore be a sign of Graves’ disease, or just a part of the person’s natural appearance.

⁴⁷Tracey Loughran, ‘Shell-Shock and Psychological Medicine in First World War’, *Social History of Medicine*, 22, 1 (2009), 79–95, 81–2; For quote, see Anonymous, ‘Obituary: Millais Culpin’, *BMJ*, 2 (1952), 727–8, 728.

Beyond surgery, the recognition of psychological factors was encouraged by the widespread mental strain of modern warfare, which anticipated the emergence of psychosomatic approach in Finnish medicine. For instance, the prominent Finnish internist Erik Adlercreutz (1899–1989) spoke for a diencephalic origin of thyrotoxicosis based on clinical observations from the front service. He described one patient who had ‘doubtful eye symptoms’ but no goitre, which warranted a diagnosis of neuro-circulatory asthenia; and another one, who was sent away ‘neurotic’ but returned a year later with goitre, tachycardia and exophthalmos. The idea that the strain of frontlife could cause physical illness was to Adlercreutz’s mind further supported by international observations that encephalitis lethargica, fright [Schreckbasedow] and ‘terrific [sic] psychical injuries’ could trigger hyperthyroidism.⁴⁸

During the war, also Nordic medical research increasingly took up the issue of psychological pressure in the aetiology of hyperthyroidism.⁴⁹ Inspired by these studies, the Finnish surgeon Olof Biström (1913–99) inquired in 1948 whether the ‘psychical strain’ caused by participating in active warfare, being submitted to constant bombing raids, and anxiety for the security of relatives at the front could induce hyperthyroidism.⁵⁰ Even though the incidence of hyperthyroidism actually declined in Finland between the years 1935 and 1946 (probably due to undernourishment), Biström’s study opened up a line of research addressing psychological stress in the aetiology of the disease. It seems that analogous to the Anglo-American medical discussion, war acted as a catalyst for the increased prominence of ‘psychosomatics’ and ‘stress’ in Finnish medicine.⁵¹ Then, new medical theories began to reorganise the old conceptions that linked the nervous system to thyroid diseases. Coming to the 1950s, this interest was further motivated by the epidemic occurrence of hyperthyroidism and a consequent increase in surgical interventions.⁵²

‘Functional thyrotoxicosis’ – diagnostic laboratory and stress-induced hyperthyroidism

For decades, Finnish physicians had recognised that external factors, including psychological strain, could aggravate thyrotoxic symptoms.⁵³ Already in 1940, the Finnish psychiatrist Lauri Saarnio had suggested that fear was a ‘psychosomatic phenomenon’ that could even cause Basedow’s disease in those susceptible.⁵⁴ After the wars, in a meeting of Finnish Medical Society *Duodecim*, Saarnio repeated the

⁴⁸Erik Adlercreutz, ‘On the Neurocirculatory Syndrome (Neurocirculatory Asthenia) in Soldiers II’, *Acta Medica Scandinavica*, 123, 4 (1946), 303–16, 309–10.

⁴⁹E. Meulengracht, ‘Increasing Incidence of Hyperthyroidism in Denmark’, *Acta Medica Scandinavica*, 121, 5–7 (1945), 446–59; Reidar Grelland, ‘Thyrotoxicosis at Ullevål Hospital in the Years 1934–1944 with a Special View to Frequency of the Disease’, *Acta Medica Scandinavica*, 125, 2 (1946), 108–38.

⁵⁰Olof Biström, ‘A Contribution to the Knowledge of the Frequency of Thyrotoxicosis in Finland During the Years 1935–1946’, *Acta Medica Scandinavica*, 130, 2 (1948), 199–211, 199–200, 207–9.

⁵¹See eg. Theodore M. Brown, ‘“Stress” in US wartime psychiatry: World War II and the immediate aftermath’, in D. Cantor and E. Ramsden (eds), *Stress, Shock and Adaptation in the Twentieth Century* (Rochester: University of Rochester Press, 2014), 121–41. There has been controversy regarding when the stress concept emerged, for review, see Mark Jackson, ‘Stress in post-war Britain: an introduction’, in M. Jackson (ed.), *Stress in Post-War Britain 1945–1985* (London: Routledge, 2019), 1–15, 5–8.

⁵²The number of thyroid surgeries more than doubled due to a steep increase in thyrotoxic cases from 1945 to 1951, amounting to 1 700 surgeries in 1953. Raine Jussila, ‘Strumans allmänna epidemiologi i Finland’, *Nordisk Medicin*, 57, 23 (1957), 807–9, 809. The epidemic of toxic goitre could be related to the better nutritional situation after the war and the introduction of iodine salt to the market in 1949, but the proliferation of cases is still today not fully accounted for. Lamberg, *op. cit.* (note 12), 60–3. Furthermore, when the Continuation War ended in the autumn of 1944, Finland lost areas in the East, including the Vyborg District Hospital and Sortavala Hospital that had taken care of many patients with a goitre, leading to practical difficulties in surgical treatment. Martti Hämäläinen, ‘Struuma ja jodi’, *Suomen Lääkäreilehti*, 5, 8 (1950), 273–80, 274; Allan Tiitta, *Collegium medicum: Lääkintöhallitus 1878–1991* (Helsinki: Terveiden ja hyvinvoinnin laitos, 2009), 244.

⁵³See eg. T. W. Tallqvist, ‘Om undernäring och inre sekretion’, *Finska Läkaresällskapets Handlingar*, 64, 1–2 (1922), 1–17; Toivo Kaartinen, ‘Zur Klinik der Präpubertätsstruma nebst mikroskopischen Kapillaruntersuchungen bei derselben’, *Acta Societatis Medicorum Fennicae Duodecim*, 7, 5 (1926), 1–127 and Toivo Seppä, ‘Vähäkaloriaisen vihannesravinnon vaikutuksesta tyreotoksikooseihin’, *Duodecim*, 45, 12 (1929), 1094–113.

⁵⁴Lauri Saarnio, ‘Sotaneurooseista’, *Duodecim*, 56, 9 (1940), 229–54, 232. In the early physiological studies on emotions, particularly in psychosomatic medicine, thyroid hormones had drawn a lot of attention, as the physical symptoms of

general idea that functional symptoms could be psychogenic.⁵⁵ The statement marked a cautious withdrawal from the constitutional paradigm, but was met with reservation from internists. To their mind, assuming the primary influence of the mind was a futile detour in the medical explanation of neuroses – an understandable reaction, noted the psychiatrist Carl-August Borgström, since thyrotoxicosis, too, had been incorrectly regarded as a neurosis only a few decades earlier.⁵⁶ Yet, even the reluctant internist Pekka Brummer had to admit in 1947 that the psychic and somatic disturbances were ‘often extremely difficult to differentiate’ in ‘psychosomatic diseases’, when he tried to replace psychogenic explanations of cardiac disturbances with a thyroidal hypothesis.⁵⁷ As the 1950s progressed, physicians began to find the psychosomatic interpretation of hyperthyroidism increasingly persuasive, not least thanks to the findings of modern endocrine research.

Following the Second World War, when the resources for medical research were gradually restored, methods measuring thyroid hormones started to replenish the former diagnostic practises. In particular, the BMR test faced ardent criticism.⁵⁸ As Biström explained, the BMR seldom yielded useful results when it came to ‘neuropathics’ and ‘border cases’ of hyperthyroidism, since both suffered from ‘involuntary tremors and agitation’.⁵⁹ The new methods included protein-bound iodine (PBI), a marker measuring the total amount of iodine in the blood stream, and the iodine uptake test that made use of iodine’s radioactive isotope.⁶⁰ As iodine was the central component of thyroid hormones, these methods indirectly reflected thyroid function. However, using these tests in practise was faced with many obstacles.⁶¹ The dubious honour given to the diagnosis of hyperthyroidism for sometimes being ‘the most difficult in medicine’ persisted in the 1950s.⁶²

A significant feature of the post-war Finnish medicine was an increased orientation towards the United States. The development was made possible by improved research exchange, motivated by the status of the United States as the new centre of science and the arrangement of Finnish war debts to be partly paid through the ASLA-Fulbright Scholarship system.⁶³ Through the scientific co-operation, the Finns became acquainted with the recent currents of anatomical and biochemical research. The language of Finnish science also changed from German to English, which aided scientific dialogue. In the late 1940s, American researchers suggested that stress influenced the amount of iodine in the blood,

hyperthyroidism – protruding eyes, tremors and sweating – resembled the body’s response to fear. Otniel Dror, ‘Emotionen und der physiologische Körper’, in A. Geithövel and B. Hitzer (eds), *Auf der Suche nach einer anderen Medizin: Psychosomatik im 20. Jahrhundert* (Berlin: Suhrkamp, 2019), 74–88, 78–9.

⁵⁵Lauri Saarnio, ‘Mitä ymmärretään neuroosilla?’, *Suomen Lääkärilehti*, 1, 13 (1946), 313–9.

⁵⁶Nillo Hallman, ‘Duodecim-seuran kokousten pöytäkirjoja’, *Duodecim*, 63, 1 (1947), 78–119, 97.

⁵⁷Pekka Brummer, ‘The Relation of Thyroid Adenomata to Neurocirculatory and Gastric Dystonia’, *Annales Medicinæ Internæ Fenniae*, 36, 2 (1947), 232–41, 235.

⁵⁸Johannes Wahlberg, ‘On the Practical Importance of the Clinical Determination of the Basal Metabolic Rate in Thyrotoxicosis’, *Acta Chirurgica Scandinavica*, 93 (1946), 410–6; Martti Karvonen and Mikko Niemi, ‘Perusaineenvaihdunnan määrittäksen luotettavuus ja eräitä siihen vaikuttavia tekijöitä’, *Duodecim*, 68, 4 (1952), 265–9.

⁵⁹Olof Biström, ‘The Clinical Basal Metabolic Rate and the Diagnosis of Thyrotoxicosis’, *Annales Chirurgiae et Gynaecologiae Fenniae*, 36, 2 (1947), 142–53, 143, 150–1.

⁶⁰The radioactive isotopes were taken into use gradually during 1950s, but the iodine tolerance test was known earlier. Erik Unonius, *Iodine Determinations and Diagnosis in Hyper- and Hypothyreosis* (Stockholm: Acta Chirurgica Scandinavica, 1946) suppl. 106, 7.

⁶¹The careless use of iodine as a treatment for hyperthyroidism together with technical difficulties undermined the determination of PBI. Klaus Järvinen, ‘Tyreotoksikoosin aiheuttama sydänvika – helposti diagnosoimatta jäävä sairaus’, *Duodecim*, 71, 5 (1955), 627–38, 633. When it comes to the measurement of radioactive iodine, in a geographical area of nodular endemic goitre, the iodine uptake of the thyroid gland was often high even if the patient was not thyrotoxic. Bror-Axel Lamberg, ‘Tyreoidesajukdomarnas funktionsdiagnostik’, *Nordisk Medicin*, 57, 23 (1957), 818–20, 820; Bror-Axel Lamberg *et al.*, ‘An Appraisal of the Diagnostic Significance of Radioactive Iodine and the Protein-Bound Iodine in the Serum in an Endemic Goitre Area’, *Acta Medica Scandinavica*, 158, 1 (1957), 63–70, 69.

⁶²Bror-Axel Lamberg, ‘Synpunkter på diagnos och medicinsk behandling av tyreotoxikos’, *Suomen Lääkärilehti*, 9, 12 (1954), 874–94, 874.

⁶³For more detail and additional literature, see Hanna Honkamäkilä, ‘Interest in Deepening U.S.–Finnish Scientific Co-Operation 1947–1952’, *Faravid*, 40 (2015), 195–212.

particularly the protein-bound fraction.⁶⁴ The connection created a fertile ground for applying the medical concept of stress to the functional phenomena that had long been associated with neurosis.

Physiological research of the interwar years had suggested that both the subjective experience of emotions and their physiological expression were transmitted through the hypothalamus, which together with the pituitary gland formed the centre of hormonal regulation in the human brain. The brain model potentially explained the psychogenic factors in many illnesses, including exophthalmic goitre.⁶⁵ Being at the forefront of describing pituitary–thyroid-interaction, the Finnish pathologist Unto Uotila (1910–77)⁶⁶ discovered in 1939 that the thyroid glands of rats no longer reacted to cold if their pituitary stalk was sectioned. In practise, this observation indicated that changes in thyroidal function were controlled by the nervous system. Following the propositions of physician Hans Selye’s general adaptation syndrome (GAS),⁶⁷ Uotila conceptualised cold as an ‘acute stimulus’ that could cause proliferation of thyroid cells.⁶⁸ The findings indicated a connection between psychological strain and a thyroidal reaction, even the upsurge of a goitre. Together with physician Aimo Pekkarinen, Uotila even suggested a theoretical addition to the GAS theory in 1951 by claiming that it had ‘hitherto underestimated’ the role of the thyroid gland in the adaptive process.⁶⁹

The introduction of stress theory also had a bearing on the understanding of the connection between the female sex and the thyroid gland that had prevailed in Finland since the early twentieth century. The thyrotoxic symptoms resembled not only neurotic, but also climacteric ones; thyroid diseases were more common in the female population and the changes in the levels of sex hormones seemed to alter the size and function of the thyroid gland, subjecting women to thyroidectomies.⁷⁰ In the stress discussion, the life changes of a woman (puberty, menstruation, pregnancy and menopause) became endocrine stresses that required adaptation of the whole organism. For instance, first Finnish in-depth studies on Selye’s diseases of adaptation argued that pregnancy was ‘one of the severest and most prolonged kinds of stress’ that the human body could physiologically endure.⁷¹ In addition, these events had obvious social and

⁶⁴Robert Williams, Herbert Jaffe and Carol Kemp, ‘Effect of Severe Stress upon Thyroid Function’, *American Journal of Physiology*, 159 (1949), 291–7, 296–7.

⁶⁵Dror, *op. cit.* (note 54), 82–4.

⁶⁶At the time of publication, Uotila was visiting the Department of Anatomy at the Harvard University (1938–9). Uotila was a pioneer of Finnish histochemical studies and attained international stature for his work in this field. Ignatius, *op. cit.* (note 9), 571–2.

⁶⁷In the early 1940s, physician Hans Selye (1907–82) formulated a model of how the endocrine system regulated physiological responses to external stress, called the GAS. According to Selye’s theory, stress triggered a chain of protective hormonal events that were aimed to aid body’s adaptation to external stimuli. If the stimulation of pituitary–adrenal axis was constant, the protective mechanism became pathological, resulting in disease and death. On Selye and GAS, see Mark Jackson, *The Age of Stress: Science and the Search for Stability* (Oxford: Oxford University Press, 2013), 99–140.

⁶⁸Unto Uotila, ‘On the Role of the Pituitary Stalk in the Regulation of the Anterior Pituitary with Special Reference to the Thyrotropic Hormone’, *Endocrinology*, 25 (1939), 605–14, 606, 612–4. In the same study, Uotila was also the first to recognise that the hypothalamus released some substance that stimulated the pituitary gland to excrete thyrotropin, the thyroid-stimulating hormone. This substance was later identified as thyrotropin-releasing hormone. Lamberg, *op. cit.* (note 12), 38.

⁶⁹Unto Uotila and Aimo Pekkarinen, ‘The Relation of the Human Adrenal Glands to the Pathological Changes Produced by Continuous Stress Ending in Death’, *Acta Endocrinologica*, 6 (1951), 23–50, 38–9, 47–8.

⁷⁰See eg. Erik Adlercreutz, ‘Orientierende Untersuchung über die Verbeutung des Kropfes in Finnland und über deren Zusammenhang mit dem Jodvorkommen im Wasser’, *Acta Medica Scandinavica*, 69 (1928), 1–45, 187–222, 325–91; P. I. Tuovinen, ‘Prepubertetistruuman esiintymisestä Suomen maaseudulla’, *Duodecim*, 49, 5 (1933), 393–411; Mauri Rouhunkoski, *On the Relation Between the Thyroid Gland and Uterine Myoma* (Helsinki: University of Helsinki, 1948) and M. A. Kauppinen, ‘Kilpirauhashäiriöiden vaikutuksesta kuukautisiin’, *Avioliitto ja Lääkäri*, 6, 3 (1955), 51–3. The influence of gender has been brought up in the histories of other psychosomatic pathologies, namely cancer and migraine. See, respectively, Patricia Jasen, ‘Malignant Histories: Psychosomatic Medicine and the Female Cancer Patient in the Post-War Era’, *Canadian Bulletin of Medical History*, 20, 2 (2003), 265–97 and Katherine Foxhall, *Migraine: A History* (Baltimore: Johns Hopkins University Press, 2019), 6–10, 42–60.

⁷¹S. Parviainen, K. Soiva and C.A. Ehrnrooth, ‘On the Aetiology of Eclampsia’, *Annales Chirurgiae et Gynaecologiae Fenniae*, 1, suppl. 1 (1950), 1–14. The theoretical formulation behind this claim was presented in S. Parviainen, K. Soiva and C.A. Ehrnrooth, ‘The Toxaemia of Late Pregnancy and the Theory as to the Syndrome of General Adaptation’, *Acta Obstetricia et Gynecologica Scandinavica*, 29, 2 (1949), 186–96.

psychological aspects that bridged between biology and the everyday life in the Finnish society.⁷² Through this, the GAS theory offered a biochemical explanation to how the stresses of the female lifespan were inscribed onto the bodies of women.

Several Finnish studies from the 1950s supported the hypothesis that stress had a clear influence on many hormonal events. The studies subjected rats to loud noises and flashing lights in order to reproduce the ‘mental strain’ in humans.⁷³ One study, conducted by the histologist Olavi Eränkö (1924–84)⁷⁴ and his colleague Antero Muittari, warrants a special mention. Modelling the research design by the American experimental psychologist Norman Maier, the researchers created an ‘experimental neurosis’ in rats that was supposed to mimic the human experience of the condition. To do this, they conditioned a reflex in rats only to create a ‘conflict situation’ by breaking this reflex. Although it was questionable how ‘neurotic’ the rats actually became, the study indicated that subtle stress produced by psychogenic means could change both the structure and function of the thyroid gland.⁷⁵

The aforementioned developments led physicians to wonder, as the prominent endocrinologist Bror-Axel Lamberg (1923–2014) put it, whether ‘at least some forms of thyrotoxicosis should be equated with peptic ulcers and hypertension and to be counted among psychosomatic illnesses’.⁷⁶ For some, the answer was a resounding ‘yes’, and in 1956, surgeon Erkki Saarenmaa formulated a category of ‘functional thyrotoxicosis’. By studying three contemporary ways of diagnosis – the clinical, the biochemical and the cellular approaches – he arrived at the conclusion that some forms of thyrotoxicosis could in fact be functional, determined solely on the basis of clinical findings and PBI. The findings brought to the fore the ‘psychosomatic nature of the disease’.⁷⁷ Saarenmaa gave an illustrative example of a patient with ‘functional thyrotoxicosis’, whose symptoms were not alleviated by thyroid surgery, but required treatment at a psychiatric clinic instead:

The patient is a young woman, wife of an undergraduate. In the clinical picture, psychic restlessness is a striking feature. The psychic »stress« here partly consists of financial difficulties and the fear of pregnancy. The preoperative PBI readings were [heightened]. [During] the operation the external appearance of the gland was found to be normal... The operation had no effect on the symptoms of the disease. The patient was after the surgery under treatment at a psychiatric clinic. The PBI readings... varied in accordance with patient’s psychic condition... In the follow-up a year and a half after the operation the patient’s general condition was very good, psychically she was well-balanced... [her] PBI was [normal].⁷⁸

The concept of stress and the innovation of measuring PBI resulted in a plausible suggestion that the ‘neurosis with endocrine disturbances’ Wahlberg described in 1928 was actually a psychosomatic illness,

⁷²See eg. Sakari Parviainen, ‘Ansiöäidin asemasta yhteiskunnassa’, *Avioliitto ja Lääkäri*, 5, 4 (1954), 105–11; Aksel Saloheimo, ‘Gynekologisten häiriöiden psyykkillistä taustaa’, *Avioliitto ja Lääkäri*, 4, 3 (1953), 56–9 and Kalevi Niemineva, ‘Synnytys- ja naistentautilääkärin näkemyksiä alan tämänhetkisistä ongelmakysymyksistä’, *Avioliitto ja Lääkäri*, 7, 1 (1956), 25–35.

⁷³See eg. Esko Näätänen and Erkki Jänkälä, ‘Effect of Psychic Stress on the Cells of the Pituitary Body and the Suprarenal Glands of Rats’, *Annales Experimentalis et Biologiae Fenniae*, 32 (1954), 410–8 and Erkki Jänkälä and Esko Näätänen, ‘Effect of Intense Mental Strain on the Morphological Picture of the Testes’, *Annales Experimentalis et Biologiae Fenniae*, 33, 3 (1955), 231–8.

⁷⁴Eränkö was the father of Finnish histochemistry and one of the most cited Finnish researchers during the 1950s. His methods for discerning adrenaline and noradrenaline secreting cells became world-famous. Ignatius, *op. cit.* (note 9), 572–3.

⁷⁵Olavi Eränkö and Antero Muittari, ‘Effects of Experimental Neurosis on the Thyroid and Adrenal Glands of the Rat’, *Acta Endocrinologica*, 26 (1957), 109–16.

⁷⁶Bror-Axel Lamberg, ‘Förhållandet mellan hypofys och sköldkörtel’, *Suomen Lääkärilehti*, 20 (1955), 1589–99, 1592.

⁷⁷Erkki Saarenmaa, *The Significance of Biochemical and Histological Functional Diagnosis in Diseases of the Thyroid Gland* (Stockholm: Acta Chirurgica Scandinavica, suppl. 207, 1956), 62.

⁷⁸*Ibid.*

now indicated with biomedical apparatus.⁷⁹ However, the circular relationship between thyrotoxicosis and stress creates a chicken-egg dilemma that deserves further attention. The former example illustrates the aetiological significance of stress. On a contrary note, a case that Saarenmaa described a few years later implied that thyroidal dysfunction was behind a ‘psychogenic reaction’ and ‘amnesia’ in a 35-year-old housewife, whose condition improved with a strumectomy.⁸⁰ When the clinical picture of functional thyrotoxicosis also ‘resembled a psychosis’, the term functional thyrotoxicosis seems to describe only one side of the mind–body interaction. The historian Matthew Smith has noted regarding the history of food allergy that the psychosomatic connection could work in both directions: food allergy could be construed as a cause of mental illness, or allergy symptoms could be dismissed as being all in the mind.⁸¹ The category of functional thyrotoxicosis therefore illustrated the interpretative potential of the psychosomatic approach. In Saarenmaa’s case, the surgical background guided him to the questions of iodine metabolism and to some extent obscured the psychiatric point of view.

In more ways than one, Saarenmaa’s research summarised the Finnish biomedical understanding of stress in thyrotoxicosis. Saarenmaa’s attention to biochemistry and the clinic was supplemented with a histological observation that goitres, sometimes already necrotic and fibrotic ones, produced hyper-epithelial areas in reaction to ‘different stresses’, for instance, pregnancies.⁸² Based on these and other findings, Saarenmaa insinuated to an audience of physicians that stress was a common pathogen of modern ‘manager’s disease’ and hyperthyroidism, which linked thyrotoxicosis to the ‘unnatural’ urban culture.⁸³ The notion complies with Charles Rosenberg’s narrative of ‘pathologies of progress’, according to which ‘stress’ has been repeatedly used to denote the ‘poorness of fit’ to a changing environment.⁸⁴ Saarenmaa’s analogy similarly illustrates how effortlessly the term ‘stress’ moved between histological, biochemical, clinical and social levels.

The implications that improved diagnostic laboratory and stress research had on the understanding of hyperthyroidism were clear, but the issues of differential diagnostics and unnecessary surgical treatment persisted.⁸⁵ The attitudes towards the latter started to change, when the consequences of misdiagnoses for psychiatric patients began to attract more attention during the 1950s. In an era of increasing specialisation in medicine, the biomedical concept of stress – the possibility of psychological causation through the pituitary–thyroid-axis – seemed inadequate to psychiatrists, who aspired to see the patient not just as a pool of symptoms but as a person with a distinct life story. The Finnish psychiatrists who endorsed dynamic psychiatry⁸⁶ and its psychosomatic ideas were of the opinion that a missing piece of the thyrotoxic puzzle, or rather a missing framework in which the pieces should be put together, was a psychosomatic, ie. holistic, understanding of illness and health.

⁷⁹Relatedly, the historian Keith Wailoo argues that diagnostic technologies play an important role in shaping disease identities. Keith Wailoo, *Drawing Blood: Technology and Disease Identity in the Twentieth Century* (Baltimore: Johns Hopkins University Press, 1999), 1–3, 10.

⁸⁰Saarenmaa, *op. cit.* (note 3), 43.

⁸¹Matthew Smith, ‘Food allergy, mental illness and stress since 1945’, in M. Jackson (ed.), *Stress in Post-War Britain, 1945–85* (London: Routledge, 2015), 145–60.

⁸²Saarenmaa, *op. cit.* (note 77), 62.

⁸³Erkki Saarenmaa, ‘Struuman ja tyreotoksikoosin nykyaikainen hoito’, *Duodecim*, 74, 3 (1958), 131–42, 134, 41.

⁸⁴Charles Rosenberg, ‘Pathologies of Progress: The Idea of Civilization as Risk’, *Bulletin of the History of Medicine*, 72, 4 (1998), 714–30.

⁸⁵See eg. Klaus Järvinen and Elli Leikola, ‘Causes of Endemic Goitre in Helsinki – Some Observations Based on 952 Cases of Non-Toxic or Simple Goiters’, *Annales Medicinae Internae Fenniae*, 45, 1 (1956), 1–15, 6, 10; Klaus Järvinen, ‘Mitä rutiinitutkimuksia yleislääkärin on syytä sisätautitapauksissa tehdä’, *Duodecim*, 72, 7 (1956), 558–70, 568 and Teppo Vartio, ‘Earlier and Later Diagnoses of Hospitalized Patients with So-Called Functional Disorders’, *Annales Medicinae Internae Fenniae*, 48, 1 (1959), 45–54, 47.

⁸⁶Dynamic psychiatry emphasises that all psychological events are conditioned by drives, and it aims to understand the drives and conflicts that underlie psychopathology. The approach was dominant in Finnish psychiatry from the 1950s to the 1990s. For a historical review, see Henri Ellenberger, *The Discovery of the Unconscious: The History and Evolution of Dynamic Psychiatry* (New York: Basic Books, 1970), 886–97 (historical review) of international developments.

A psychosomatic study of thyroidectomised patients – the re-evaluation of surgical treatment

During the 1950s, psychodynamically oriented psychosomatic medicine became popular in the Finnish medical community. The psychosomatic approach was adopted from American psychiatry, where, not by coincidence, hyperthyroidism was included in the psychoanalyst Franz Alexander's Holy Seven of psychosomatic illnesses.⁸⁷ The theoretical gap between psychosomatic medicine and stress research was clear, but not as deep as is sometimes implied. A 1951 article by Alexander and his colleagues entitled 'A Psychosomatic Theory of Thyrotoxicosis' even referred to the studies of Uotila to argue that psychoanalytical theories were founded on the results of physiological research.⁸⁸ Similarly in Uotila's home country, the ideas of psychosomatic medicine would become relevant to the old biomedical issue of thyroid diagnostics. The audience for Alexander's formulations consisted of the new generation of psychiatrists who ascribed to the idea of psychogenesis. With this development, the gaze of Finnish psychiatrists extended to the realm of internal medicine and surgery.

International discussion on the unnecessary surgeries of psychoneurotics motivated the psychiatrist and psychoanalyst Henrik Carpelan (1921–2000)⁸⁹ to discuss thyroidectomies from a psychiatric viewpoint. From Carpelan's very first publication on the subject in 1953 (unusually written in French, yet published in a Nordic journal), one can discern topics characteristic to the biomedical discussion. Many of the operated patients seemed to have a history of neurosis; it was arguable whether post-surgical findings were due to endocrine imbalance or psychiatric causes and the operation itself constituted a psychological and physiological stress.⁹⁰ In 1956, Carpelan adopted a more confrontational attitude that reflected the different theoretical groundings of biomedical and psychoanalytical interpretations of psychosomatics. He studied material consisting of nearly two thousand debility pension applications made on the grounds of neurosis and found that a quarter of all operated women (499) had had a goitre removed. This discovery led him to conclude:

Probably a number of these patients with thyroid operations belonged to the group of vegetatively instable persons, predisposed to thyrotoxicosis. It is a certainty, however, that many of them were operated [on] because of misinterpreted anxiety states. Nor does it appear improbable that some cases observed by me, had been operated [on] for some kind of *globus hystericus*, interpreted as a pressure symptom.⁹¹

To explain the inference, Carpelan scolded the operating surgeon and the patient, claiming that surgeons were 'blind to the patient's psyche, possibly even for unconscious sadistic impulses', and that patients were responsible for the 'masochistic craving to be operated and mutilated'. The latter comment was based on an observation that gynaecological, abdominal and thyroidal operations were common in female neurotics, and 123 of the 499 were operated more than twice.⁹² Carpelan seemed to dismiss the biological reasons for operations and, in this, exhibited a strong psychoanalytical orientation and a critical attitude towards radical treatment.

⁸⁷Franz Alexander, *Psychosomatic Medicine* (New York: W. W. Norton & Company, Inc., 1950), 170–84.

⁸⁸George Ham, Franz Alexander and Hugh Carmichael, 'A Psychosomatic Theory of Thyrotoxicosis', *Psychosomatic Medicine*, 13, 1 (1951), 18–35, 20.

⁸⁹After the publication of his dissertation, Carpelan was educated in psychoanalysis in Switzerland, and was a central figure in the development of group psychotherapy in Finland. He was in personal communication with the Finnish supporter of psychosomatic medical research Ane Gyllenberg, who inquired from the Goetheanum whether anthroposophic medicine developed by Rudolph Steiner had ever touched upon the question of thyroid diseases. Annika Nylund and Kari Koski, *Ane Gyllenbergs liv: Skrivet ur arkivet* (Helsinki: Signe & Ane Gyllenbergs stiftelse, 2018), 95–6. Translator: Koski.

⁹⁰Henrik Carpelan, 'Troubles psychiques après Thyroïdectomie', *Acta Psychiatrica et Neurologica Scandinavica*, 3, suppl. 106 (1953), 217–21, 220–1.

⁹¹Henrik Carpelan, 'Operations in the Histories of the Neurosis Material at the National Pension Institute', *Acta Psychiatrica et Neurologica Scandinavica*, 6, suppl. 106 (1956), 184–91, 184–9.

⁹²*Ibid.*, 190.

The stance was buoyed in Carpelan's dissertation, published in 1957. Its opening words noted that the substantial number of thyroidectomy scars had attracted attention in the psychiatric hospitals of Finland.⁹³ Looking at the medical histories of fifty-three psychiatric patients operated on for goitre, Carpelan argued that nineteen patients were thyroidectomised due to a misdiagnosed thyrotoxicosis.⁹⁴ Carpelan offered anonymised case files at the end of his dissertation. One patient was a 39-year-old workingman's wife with apparently no thyroid pathologies:

After having been some months at work her actual disease began with vegetative symptoms and hypochondriasis, which was interpreted as hyperthyroidism. She underwent a thyroidectomy in 1950. After the operation, her troubles continued with intensified strength, only transiently somehow alleviated during hospitalisations. In 1951 she was admitted to a psychiatric hospital, during which stay she was operated on for perianal abscess... She has suffered from agoraphobia, transient generalised itching and pruritus vulvae... The p. is obviously strongly oedipally fixated. Her complaints are sexualised and an expression of masochism in a Freudian sense... The non-indicated thyroidectomy (the surgeon later admitted his error) fixated her neurosis, which must be seen as practically incurable.⁹⁵

Carpelan held that psychoanalytical conflicts and emotional stresses (illness in family, pregnancy and long-standing personality conflicts to name a few) precipitated thyrotoxicosis. Based on this and other cases, Carpelan argued that diagnostic practise was skewed in favour of a somatic diagnosis, and inferred that when physicians looked for an organic disease to account for symptoms, the possibility of a neurosis was easily overlooked. Therefore, ill-informed diagnoses emanated from medical thinking that lacked 'a holistic view'. Carpelan went on to argue that only a psychotherapeutic understanding at surgical clinics could ensure correct diagnosis and save patients from the sad faith.⁹⁶

Judging from the other psychosomatic studies of the 1950s and the 1960s, the call for holism was not just Carpelan's quirk. Psychodynamic factors appeared as a part of a multi-causal chain, and psychoanalytic theories and physiologically oriented studies were discussed side by side. To offer an illustrative example, Carpelan and the psychiatrist Yrjö Alanen referred to Franz Alexander, Helen Flanders Dunbar, Walter Cannon, Stewart Wolf, Harold G. Wolff, Edward Weiss and O. Spurgeon English in the course of a single article.⁹⁷ Weiss and English's idea that illness was not simply organic or psychological, but to a varying extent both was a stepping stone for many Finnish psychosomaticists. Weiss and English also commented on the differential diagnostics of thyroid diseases and brought attention to cases where strumectomy had triggered a psychiatric disease, which suggests the relevance of the problem beyond Finland.⁹⁸

Still, psychogenic disease remained a highly controversial topic for some physicians. The sceptics questioned whether making a point on the psychological aspect of somatic disease would actually help or hinder the diagnostic process. When a Finnish pioneer of psychosomatic medicine, Martti Paloheimo, spoke in a meeting of the Finnish Medical Society in 1952 with the title 'Psychological Medicine and the Clinic', internist Klaus Järvinen fretted that a somatic diagnosis might go unnoticed if psychological factors were overemphasised. The discussion that followed seemed to allude to the opinion that psychological factors were significant, but the theoretical basis of 'psychosomatic medicine' was inadequately demonstrated. Moreover, naming a group of diseases as 'psychosomatic illnesses' was

⁹³Henrik Carpelan, *Mental Disorders in Thyroidectomized Patients: A Psychosomatic Study of 53 Cases* (Helsinki: University of Helsinki, 1957), 7, 9.

⁹⁴*Ibid.*, 122.

⁹⁵*Ibid.*, 172.

⁹⁶*Ibid.*, 92–3, 124–5.

⁹⁷Yrjö Alanen and Henrik Carpelan, 'Näkökohtia hypertonian sielullisista syistä kahden tapauksen havainnollistamana', *Duodecim*, 70, 7 (1954), 684–99.

⁹⁸Edward Weiss and O. Spurgeon English, *Psychosomatic Medicine* (Philadelphia: Saunders, 1943), 64–9, 271–309.

thought to be 'idle self-aggrandisement on behalf of the field'.⁹⁹ Even though stress studies also argued for the relevance of psychological factors, the bias against psychosomatic medicine undermined the co-operation between specialties and stood out in the slow adoption of psychiatric consultation practise.¹⁰⁰ When consultation did take place, patients with goitre were often sent for a second opinion, which can be taken as an indication that psychosomatic thinking was making some headway in clinical medicine.¹⁰¹

Despite the lack of communication between specialties, the gist of the psychiatric critique emerged somewhat independently in the biomedical discussion. A suspicion that the residual symptoms sometimes observed after a strumectomy might not be a sign of a recurrent thyrotoxicosis, but caused by an underlying psychoneurosis, crept into Nordic medicine during the 1950s.¹⁰² In Finland, the high amount of strumectomies and other treatment possibilities that challenged the authority of surgery sparked critical comments. For instance, the internist Pentti Peltola noted in 1954 that a 'combination of cardiac symptoms can, especially in a district with a high incidence of adenomatous goitre, ... simulate thyrotoxicosis and even lead to an operation for goitre'. That this was 'really possible' was implied by his earlier finding that up to one fifth of patients admitted for functional cardiac disturbances received no relief from thyroidectomy.¹⁰³ In the same vein, surgeon Panu Vilkki and internist Eero Tala showed in 1963 that 24% of thyroidectomised patients still suffered from residual symptoms many years after the surgery. The persisting symptoms were mostly 'of psychosomatic nature', and their relation to 'the original goitrous disease' was 'often difficult to assess'.¹⁰⁴

During the 1960s, the calls for therapeutic caution intensified. In 1961, Bror-Axel Lamberg described to the students of endocrinology a 'secondary thyrotoxicosis', the hyperfunction of the thyroid gland observable in climacterium and mental illnesses. In these cases, the symptoms vanished after the primary cause was treated, which required a conservative treatment, including the mere observation of the patient.¹⁰⁵ Lamberg's notion resembles the claim Saarenmaa made in his 1963 monograph, namely that many patients 'did not require therapy, only information', and that excess therapeutic enthusiasm of a surgeon was nothing but an act of quackery.¹⁰⁶ Erring on the side of conservatism might have already been influenced by the broader trends in surgery stressing less invasive operative techniques.¹⁰⁷ Yet, the issue of excess strumectomies appeared to be persistent. Still in 1971, William Kerppola, a specialist in both internal medicine and psychiatry who had been interested in functional heart symptoms since the

⁹⁹Niilo Hallman, 'Duodecim-seuran kokousten pöytäkirjoja v. 1951', *Duodecim*, 68, 3 (1952), 243–4.

¹⁰⁰Eero Valanne, 'Potilaan ja lääkärin välisestä suhteesta', *Suomen Lääkärilehti*, 17, 22 (1962), 1651–7. For a review on consultation psychiatry in the United States, see eg. Paul Summergrad and Thomas Hackett, 'Alan Gregg and the Rise of General Hospital Psychiatry', *General Hospital Psychiatry*, 9 (1987), 439–45 and John J. Schwab, 'Consultation-Liaison Psychiatry: A Historical Overview', *Psychosomatics*, 30, 3 (1989), 245–54.

¹⁰¹Olavi Katila, 'Neurologis-psykiatrisesta konsultaatiosta', *Suomen Lääkärilehti*, 13, 30 (1958), 1465–72, 1465.

¹⁰²L. Efskind and C. Cappelen, 'Surgical Treatment of Thyrotoxicosis', *Acta Chirurgica Scandinavica*, 110, 76 (1955), 76–92, 90; Stig Borgström, 'Late Results of Surgical Treatment for Thyrotoxicosis', *Acta Chirurgica Scandinavica*, 111, 11 (1956), 351–69, 367; See also Eigil Døllerup, Carl Hansen and Børge Mølgaard, 'En efterundersøgelse af 150 mb. Basedowii-patienter behandlet med strumectomi', *Nordisk Medicin*, 50, 34 (1953), 1161–5.

¹⁰³Pentti Peltola, 'Toiminnallisista sydänhäiriöistä', *Suomen Lääkärilehti*, 7, 24 (1952), 1007–10, 1010; Pentti Peltola, 'Functional Cardiac Disturbances and Nodular Goitre', *Annales Medicinæ et Internæ Fenniae*, 43, 3 (1954), 201–7, 202–3.

¹⁰⁴Panu Vilkki and Eero Tala, *Thyroid Surgery in an Area of Low Endemicity of Goitre. A Study Based on 1 456 Thyroid Patients Treated in the Surgical Clinic, University of Turku, in 1947–1957* (Stockholm: Acta Chirurgica Scandinavica, suppl. 313, 1963), 5, 11, 17, 22. Surgeon Esko Tuohimaa also observed the persistence of subjective symptoms after thyroidectomy in 1967, but he ascribed them to hormonal imbalance. Esko Tuohimaa, *Results of Surgical Treatment of Goitre. A Study Based on a Series of 2 285 Goitre Patients Treated by Surgery in the General Hospital of Tampere from 1942 to 1963* (Helsinki: Annales Chirurgiæ et Gynaecologiæ Fenniae, suppl. 151, 1967), 21–2, 27.

¹⁰⁵Bror-Axel Lamberg, 'Tyreotoksikoosin kliiniset ilmenemismuodot', *Duodecim*, 77, 10 (1961), 327–35, 329.

¹⁰⁶Saarenmaa, *op. cit.* (note 3), 6.

¹⁰⁷See eg. Sally Frampton and Roger L. Kneebone, 'John Wickham's New Surgery: "Minimally Invasive Therapy", Innovation, and Approaches to Medical Practice in Twentieth-Century Britain', *Social History of Medicine*, 30, 3 (2016), 544–66.

1920s, stated that vegetatively instable patients were still operated on for toxic goitre.¹⁰⁸ As Carpelan send a copy of his dissertation to Kerppola, the comment may have been sparked by Carpelan's findings. More generally, the notion suggests that the proclivity to surgical intervention was embedded in clinical practises, which improved only slowly.

Eventually, the floundering attempts to grasp the clinical manifestations of hyperthyroidism were redeemed by the decline of the diagnostic conundrum. Increased biochemical knowledge clarified the mechanisms between the brain and the thyroid, gave rise to more sensitive biochemical methods and undermined the psychosomatic hypotheses of hyperthyroidism.¹⁰⁹ In 1968, Lamberg asserted that to see hyperthyroidism as a psychosomatic phenomenon, in which 'something happened in the brain that instigated the production of thyrotropin', had earlier seemed 'logical', but might be regarded as 'erroneous today'. Instead, Basedow's disease seemed to be caused by antibodies against the thyroid.¹¹⁰ When it came to the other common and clinically overlapping form of hyperthyroidism, toxic nodular goitre, the successful iodine prevention from the 1970s onwards dissolved its national health significance. The downward slope in the prevalence of hyperthyroidism and goitres was reflected in the number of strumectomies.¹¹¹ Today, the endemic has vanished, rendering the discussion about excess thyroid surgeries of psychiatric patients obsolete. Still, the diagnostic and treatment dilemma of hyperthyroidism acted as one gateway through which psychosomatic thinking entered the medical discussion in a wider sense, which prolonged the influence of the debate in Finland. The thyrotoxicosis issue can be perceived as a prologue to some orientations of Finnish psychosomatic research in the 1970s and 1980s, namely psychoneuroendocrinology and the studies on the psychological complications of surgery.¹¹²

Conclusion

If we now turn back to the starting point of the article, namely that 'the most significant mark of a neurotic was a transverse scar on the neck', we see that Saarenmaa's statement was somewhat exaggerated. The therapeutic enthusiasm expressed by Johannes Wahlberg was soon replaced by the careful evaluation of the need for strumectomy. Yet, this did not signify an end to the risk of misdiagnoses, since the conundrum consisted mostly of the overlap between the categories of neurosis and hyperthyroidism. Historians Heiner Fangerau and Michael Martin have pointed out that the diagnostic process rests on a believable link between observable symptoms and a nosological classification, which determines the course of action (treatment). The straightforward connection between symptoms and a singular illness is, however, just a 'useful fiction' (*nützliche Fiktion*) that makes clinical action possible.¹¹³ The internists' and surgeons' preoccupation with goitre and the psychiatrists' interest towards neuroses shows that physicians tended to interpret borderline cases of disease in accordance with their own

¹⁰⁸William Kerppola, 'Dystonia neurocirculatoria', *Duodecim*, 87, 19 (1971), 1299–303, 1301–2.

¹⁰⁹During the 1960s and the 1970s, one learned to measure the thyroid-stimulating pituitary hormone and both thyroid hormones T4 and T3. Welbourn, *op. cit.* (note 12), 38–9. In the 1960s, also Finns became interested in the possible autoimmune aetiology of Basedow's disease. Seppo Similä, 'Synnynnäinen tyreotoksikoosi', *Duodecim*, 83, 11 (1967), 643–7; Bror-Axel Lamberg, 'Long-Acting Thyroid Stimulator (LATS)', *Duodecim*, 85, 20 (1969), 1253–6; Bror-Axel Lamberg, 'Basedowin taudin ongelmia', *Duodecim*, 87, 12 (1971), 967–74.

¹¹⁰Bror-Axel Lamberg, 'Monimuotoinen struuma' *Terveystieteiden aikakauslehti*, 80, 1 (1968), 8–9, 68–9, 9.

¹¹¹In Helsinki internal clinic, the proportion of toxic goitres of all cases of hyperthyroidism was 92% in the 1930s and still 87% in the 1950s, but dropped to 60% by the end of the 1960s. Lamberg, *op. cit.* (note 12), 71–3.

¹¹²See eg. Leena Nikula-Baumann, *Endocrinological Studies on Subjects with Involutional Melancholia* (Helsinki: University of Helsinki, 1970); Markku Hyypä, 'Psykoneuroendokrinologia – aivohormonit terveydessä ja sairaudessa', in K. Achte, A. Pakaslahti and R. Rimón (eds), *Psykosomatiikka: Nykynäkemyksiä ja kliinisiä sovelluksia* (Helsinki: Otava, 1984), 123–46 and Jouni Outakoski *et al.*, 'Biopsychosocial Recovery of Open Heart Surgery: A Prospective Study', *Nordisk Psykiatrisk Tidskrift*, 41, 2 (1987), 91–5.

¹¹³Heiner Fangerau and Michael Martin, 'Medizinische Diagnostik und das Problem der Darstellung: Methoden der Evidenzherzeugung', *Angewandte Philosophie*, 2, 1 (2015), 38–68, 38–40, 60–1.

specialty. In this manner, the ambiguity of the psychosomatic approach created an interpretative space with a potential for both conflict and dialogue.

When the history of hyperthyroidism in Finland is compared to the twentieth century history of another emblematic psychosomatic disease, asthma (studied in the Anglo-American context by the historian Mark Jackson), we can find multiple similarities. In both cases, psychogenic theories were merged with endocrine (or immunological) ones; physical and psychological triggers were studied side by side; psychosomatic medicine altered the interpretation of the condition; and the fall of psychoanalytical theories was instigated by the progress of medical knowledge.¹¹⁴ However, the characteristics of hyperthyroidism and the Finnish context create some important differences. Whereas asthma was more or less accurately regarded as a disease of the elite child, Finnish hyperthyroidism with goitre was a disease of the masses. The public health concern over toxic nodular goitre that co-occurred with Basedow's disease and psychophysiological symptoms created a unique historical situation that gave rise to the surgery problem. The therapeutic enthusiasm influenced, in turn, the development of psychosomatic medicine: it is noteworthy that the first Finnish psychoanalytically oriented dissertation on psychosomatics focused on the issue of thyroidectomies. I contend that further inquiry in the intersections of surgery and psychosomatics would enrich both historiographies and would also help to avoid reproducing specialty distinctions through historical research. To this end, at least cancer and peptic ulcer are diseases that would benefit from further scrutiny.

In the light of the present case study, I argue that the psychosomatic concept should be understood in a more nuanced manner in the history of medicine. The present-day definition of psychosomatic illness refers to complaints the aetiology of which remains unknown and that are not related to any organic lesions.¹¹⁵ Instead, in Finnish stress research and psychosomatic medicine, the psychosomatic approach was used to emphasise the need to evaluate, how psychological and organic factors worked in reciprocity. Categorical thinking casts a shadow of doubt over the historiography of psychosomatic phenomena as well, if the term 'psychosomatic' is taken from the outset to signify something that is all in the mind.

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¹¹⁴Mark Jackson, *Asthma: The Biography* (Oxford: Oxford University Press, 2009), 139–51.

¹¹⁵See eg. Greco, *op. cit.* (note 6), 103–4.

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