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## Phantom Suffering: Amputees, Stump Pain and Phantom Sensations in Modern Britain

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The suffering inflicted by the First World War did not end in 1918. When Lieutenant Francis ('Frank') Hopkinson died on 17 December 1974, he was 85 years of age and had lived over half a century in severe pain as a result of having been wounded during the Third Battle of Ypres on 12 August 1917. He had undergone numerous operations, including having his left leg amputated three times. He had also been hospitalised with shell shock. From those terrifying months in 1917 and 1918 until his death in 1974, he endured profound physical and mental anguish due to an agonisingly tender stump and phantom limb pain.

The life of Frank Hopkinson serves as a reminder that the effects of wartime wounding lasted entire lifetimes. After the First World War, millions of men returned home with distressing physical and psychological wounds. Their lives were ruled by pain, despair and conflict with the authorities and medical personnel. Although their continued suffering was often dismissed or treated as inauthentic, disabled service personnel could not simply shrug off their misfortune; young lives could not simply be resumed. The war-afflicted body in pain was a life sentence.

Hopkinson's life can also be used as a lens through which to reflect on two debates within British society. The first relates to the relationship between lesions and suffering. Hopkinson experienced severe physical pain in a limb that had no physiological existence (phantom limb pain) and because his physicians believed his account of pain, they sought a 'cause' in some kind of pathology of his stump. The second debate arose when his doctors failed to discover any underlying biological pathology; this led them to posit an emotional basis for his suffering. In part, this latter shift was due to frustration among the physicians about being unable to ease his pain. However, it was also prompted by

a broader trend towards a psycho-social model of pain from the late 1930s onwards.

I will be arguing that a close study of the painful experiences of Frank Hopkinson – whose life as a limbless ex-serviceman spanned most of the twentieth century (1917 to 1974) – can shed a light on the responses of the medical profession in Britain to the physiology and psychology of acute and chronic pain more generally. In other words, this chapter is an exercise in microhistory, or the close study of one individual in order to reflect on broader responses within British society. As historian Filippo de Vivo has observed, microhistorical approaches to history act as ‘an antidote to the teleology and elitism of traditional political history’ and serve as ‘an alternative to the reductive determinism’ of some forms of social history.<sup>2</sup>

The specificity as well as the heterogeneity of the lives of so-called ‘ordinary’ people turns out to be an extraordinary frame through which historians can reflect on general trends. In other words, an examination of one man’s life serves as a lens through which the broader culture – including local, national and even global contexts – can be illuminated. After all, Hopkinson’s life was profoundly affected by his immediate surroundings: damp weather (which would make his phantom limb pulsate) and hearing hymns (which made him cry) were significant events in his world. So too were national events. Obviously, the British government’s declaration of war disrupted everything in Hopkinson’s world, but, subsequently, national debates about pensions, innovations in artificial limb technologies and global economic trends proved decisive. As historian Seth Koven has observed, disabled First World War veterans were ‘dismembered persons in a literal sense but also in a social, economic, political, and sexual sense’.<sup>3</sup> The physicians who treated Hopkinson operated within a medical culture influenced by specifically British factors (the establishment of the Ministry of Pensions in 1916 and, later, the National Health Service, for instance), but they were also embedded within global scientific communities. An exploration of Hopkinson’s life sheds light on the treatment of men wounded during the First World War, as well as on scientific and medical understandings about the nervous system in general, and on stump and phantom pain in particular.

## **Dismemberment**

Who was Frank Hopkinson? He was born in 1889 into a privileged family. He was the second son of Canon Charles Girdlestone Hopkinson,

Rector of Whitburn (in Sunderland), and was educated at Marlborough, an independent boarding college dedicated to schooling the sons of Church of England clergy. This strapping, six-foot-tall young man who enjoyed riding horses was reputed to be 'not very bright',<sup>4</sup> so, after a spell working as a clerk in a Nitrates Works in northern Chile, he eagerly returned to join the 11th Durham Battalion a few days after the declaration of war. At that time, medical officers judged him to be 'not particularly nervy', with 'normal' health.<sup>5</sup>

This all changed on 12 August 1917 when a bomb dropped from a plane smashed his left leg into fragments. His leg became infected with gas gangrene and had to be amputated – once in the No. 24 General Hospital at Etaples and then a second time later that year at the King Edward VII Hospital for Officers. He underwent a third re-amputation in 1927.<sup>6</sup> Hopkinson was distraught: 'It has been found necessary to reamputate the femur for protruding bone, as there is no cushion or protection whatever to the end of the stump.' This was a serious setback since 'I am now faced with the prospect of another operation, leaving very little stump, at a time when I had hoped to start work'.<sup>7</sup> He never experienced prolonged periods of employment again.

The site of his amputation was particularly unfortunate. Of the 41,300 British servicemen who had one or more of their limbs amputated as the result of war service, three-quarters lost a leg.<sup>8</sup> However, very few men endured an amputation as high as Hopkinson's. Of all the amputees who were treated (like Hopkinson) at Queen Mary's Hospital at Roehampton in London, only 11 (1.5 per cent) were left with such a short stump – that is, a stump that did not exceed five inches in length measured from the tip of the great trochanter.<sup>9</sup> In order to facilitate an artificial limb, the ideal length for thigh amputations was 10–12 inches.<sup>10</sup> In October 1918, the army's Medical Board reported that there was 'no sufficient covering on [Hopkinson's] femur'. He was left with:

merely a skin flap[,] conditions of which is poor and painful on pressure. His condition is permanent, as any operation to remedy this would practically leave no stump to assist in [word missing] of artificial limb. Instructed to proceed Home.<sup>11</sup>

This was even before the third re-amputation in 1927. As a result, the only artificial limb Hopkinson could be given was the 'tilting table' artificial limb, a notoriously heavy and difficult limb to wear.<sup>12</sup> In fact, he was never able to wear an artificial limb and spent half a century

on crutches. The Ministry of Pensions judged him to be 80 per cent incapacitated and, after a period of recuperation in his father's vicarage in Whitburn, he went to live in London. The local woman to whom he was engaged broke off the engagement and later married the super-fit Captain Percy de Winton Kitcat of the Wellesley Nautical School, Blyth.<sup>13</sup> His nephews remember him as their 'one-legged uncle' who drove a large sports coupe, in which sat a long-term male 'friend'.<sup>14</sup>

Hopkinson's amputations and the collapse of his marriage plans were complicated by another ordeal: he suffered from shell shock. For Hopkinson, his painful stump and his psychiatric instability were inseparable and unproblematic. As he explained in a letter to the Ministry of Pensions in 1919:

I have been invalided from the service and immediately find that I am unable to take up employment on account of my bad amputation ... I have had to have my stump reamputated and it will be some months before I can bear the pressure of an artificial limb. I can, therefore, only walk on crutches – *my stump is very short* and almost amounts to Disarticulation. I suffer also from nervousness, insomnia and impaired memory, having been a patient in Palace Green Shellshock Hospital for some months.<sup>15</sup>

Indeed, Hopkinson's psychological distress had been closely related to his wounding. While being evacuated to King Edward VII Hospital, he 'had to wait some hours under Railway arches during Air Raid'. The strain was too much: upon his arrival in London, he was reported to have 'developed confusion of thought with suspicions and hostility'.<sup>16</sup> On 1 October 1917, only a week after having his leg amputated a second time, he was sent for treatment to Palace Green Hospital for shell-shocked officers. On his arrival, he was described as having an 'anxious expression ... He is confused and suspicious of his surroundings, doubtful as to dates and times. Afraid of air raids and anxious to be evacuated'.<sup>17</sup> It took nearly five months for his doctors to report 'Mental condition now clear'.<sup>18</sup>

## **Phantom pain**

Although the psychological effects of Hopkinson's war service persisted throughout his life, medical attention initially focused on his phantom limb and painful stump. In themselves, phantom limbs were not



unusual. The phenomenon had first been described in 1551 by the great French military surgeon Ambroise Paré. In Paré's words:

A most clear and manifest argument of this false and deceitfull [*sic*] sense appears after the amputation of the member; a long while after they will complain of the part which is cut away. Verily it is a thing wondrous strange and prodigious, and which will scarce be credited, unless by such as have seen with their eyes, and heard with their ears the Patients who have many months after the cutting away of the Leg, grievously complained that they yet felt exceeding great pain of that leg so cut off.<sup>19</sup>

Most famously, these post-amputation sensations were brought to public attention during the American Civil War when neurologist Silas Weir Mitchell coined the term 'phantom limb' and went on to provide the first modern clinical description of 'these hallucinations ... so vivid so strange'. He observed that:

Nearly every man who loses a limb carried about with him a constant or inconstant phantom of the missing member, a sensory ghost of that much of himself, and sometimes a most inconvenient presence, faintly felt at times, but ready to be called up to his perception by a blow, a touch, or a change of wind.<sup>20</sup>

Indeed, phantom limbs were experienced by nearly all amputees (they were so common that amputees called them 'plimbs'),<sup>21</sup> but most of these sensations were 'not unpleasant' and were 'frequently even pleasant'.<sup>22</sup> In the words of one sufferer in 1945, they felt like someone was 'striking your funny-bone'.<sup>23</sup>

*Painful* phantom sensations were a completely different matter. They were much more rare. Most surgeons estimated that fewer than 16 per cent of amputees complained of painful phantoms, with the vast majority placing the percentage at closer to one per cent.<sup>24</sup> For that unlucky minority, phantoms were not simply painful, but torturous. This was certainly the case with Hopkinson, who described them as feeling like 'the foot was being crushed but ... at stump level only'.<sup>25</sup>

Specialists reported that once phantom pains had become 'established', they tended to 'persist': in one group of sufferers, only one-third of those who experienced moderate or severe phantom pain *ever* found relief subsequently.<sup>26</sup> As two experts remarked in 1945, painful phantoms posed a 'formidable therapeutic problem' and 'treatment of

this troublesome symptom is difficult at best' since 'no single method is successful in all cases'.<sup>27</sup> Even at the end of the twentieth century – when there were at least 68 distinctive treatments available for painful phantom limbs – surveys of thousands of phantom limb pain sufferers revealed that fewer than one per cent reported any significant benefits from *any* of the therapies on offer. At most, eight per cent reported experiencing partial or temporary relief after being treated.<sup>28</sup>

It comes as no surprise, therefore, that Hopkinson was frustrated by the inability of his physicians to eradicate, or even ameliorate, his agony. In October 1937, for instance, he reported suffering from 'pains like electric shocks' from his stump, which were only partly 'relieved by aspirin & whiskies & sodas'.<sup>29</sup> An unidentified physician recommended that Hopkinson try 'Antikamnia' and he concluded his report with the words 'very temperamental!!!'.<sup>30</sup> Hopkinson was unhappy about this examination, writing a few months later to complain. 'Under no stretch of the imagination could what takes place be called an examination', he grumbled:

The Medical Officer who happened to be on duty & was extremely sympathetic merely put his hands on my 'Stump' & said nothing could be done for the pains which are becoming more frequent & of considerable duration, but I could take 'Antikamnia' which has no effect. From this examination I note that the Ministry's Medical Officers are of the opinion that nothing can be done for the rest of my existence to relieve these pains.<sup>31</sup>

Being dismissed with advice to take Antikamnia must have been particularly galling for Hopkinson. Antikamnia was an extremely common 'over the counter' remedy.<sup>32</sup> Most physicians disparaged it on the grounds that 'if we are to believe the vendors, it relieves everything from flatulence to locomotor ataxia'.<sup>33</sup> It contained sodium bicarbonate, caffeine, citric acid and (the analgesic ingredient) acetanilide or antifebrin, which was known to have serious side-effects such as cyanosis.<sup>34</sup>

According to physicians at the time and to Hopkinson, phantom limb pain and stump pain were closely related. He complained of 'persistent local cutaneous tenderness of the stump'<sup>35</sup> as well as 'sharp electric shooting pains' that made him 'shout out'.<sup>36</sup> However, as time went on and no cure was found, he increasingly had difficulty persuading his doctors that his suffering was 'real' – which for him *and* the doctors meant having a *physiological* origin. Instead, medical reports focused more and more on the alleged neurotic character of his symptoms. It

did not help that his 'shell shock' had not been a direct consequence of combat, but had begun when he was subjected to an air raid on his way to hospital after landing in England. This showed a lack of soldierly self-control (after all, these bombs were intended to terrify *civilians* rather than soldiers) and was further evidence that he had a pre-existing mental weakness. From the 1930s, medical reports increasingly reiterated the view that he was of a 'marked neurasthenic type'.<sup>37</sup> He was 'a highly introspective type & very resentful'.<sup>38</sup> In the words of the Medical Board in January 1936, he was a 'man of sensitive temperament, not a good type', perhaps an allusion to his homosexuality.<sup>39</sup> On 17 July 1939, yet another medical examination catalogued his stump's 'lightning pains', but concluded that:

This officer is highly neurotic & the lesion is in his mind & not the stump. Complains of having been badly treated & that he is insufficiently compensated by a 70% [in fact, it was 80 per cent] pension. Thinks it should be 100%.<sup>40</sup>

For the remaining decades of his life, Hopkinson was plagued by accusations that his suffering was not 'real'. He had a 'curious hypochondriacal almost paranoid personality' (1951),<sup>41</sup> was 'not uncooperative but ... [was] firmly wedded to his symptoms and the disability generally' (1951)<sup>42</sup> and exhibited a 'hypochondriac type of personality – rather an "old womanish" type – egotistical and so on. Does not work & has all the time in the world to think about himself & his disabilities' (1952).<sup>43</sup> At the very least, Hopkinson's 'psychoneurosis' was 'constitutional' and the pensions authorities were therefore not liable to offer him compensation.<sup>44</sup> When he complained about the state of his hands (after spending decades using crutches, his hands 'always throbbing and aching; also wrists' and they 'present[ed] a discoloured raw beef appearance, about 4 [inches] x 2 [inches]'), the Medical Officer concluded that the root cause of his disorders was his 'underling constitutional condition' and 'general nervous disposition'.<sup>45</sup> For Hopkinson, it must have seemed like he was caught in an impossible bind. Every complaint was either a pre-existing or 'constitutional' one: it was as if the war never happened.

The chief problem for Hopkinson was that he was confronting deeply embedded clinical beliefs about stump and phantom pains. From the late 1930s onwards, it was widely assumed within the medical literature that these pains were neurotic in nature. In the words of Atha Thomas and Chester C. Haddan's important 1945 textbook, 'psychic factors' played such an 'important role' in painful phantoms that

'some authors are of the opinion that the phantom limb phenomenon represents some form of an obsessional neurosis'.<sup>46</sup> Authors of a 1947 article in *Psychosomatic Medicine* went so far as to claim that *all* patients complaining of phantom pain had 'severe psychopathology'.<sup>47</sup>

The hospital where Hopkinson received most of his treatment – Queen Mary's Hospital at Roehampton – was the leading centre for the scientific investigation of stump and phantom pains. In the 1950s, R.D. Langdale Kelham carried out a four-year study of 200 men with phantom limb pain. It is hard to imagine that Hopkinson would not have been one of these patients since he was exceedingly well known to all the doctors at Roehampton at this time. Kelham concluded that the typical phantom limb patient was:

more often than not a person with an unsatisfactory personality. It may be he is an anxious, introspective, dissatisfied, ineffective [*sic*] who, becoming obsessed by his symptoms, and brooding upon them and his disability, tends to dramatise their degree, using undoubted exaggerations in his description of his sufferings.<sup>48</sup>

Kelham's assessment dominated the field. Only rarely did physicians suggest the opposite causality – in other words, that chronic pain might *lead to* psychological distress rather than being *caused by* it.<sup>49</sup>

A great deal was at stake. As we shall see shortly, one of Hopkinson's physicians recommended neurosurgery, but Hopkinson does not seem to have been offered the two other radical treatments proffered by those who believed that phantom pains were primarily the result of psychiatric shortcomings: electroconvulsive therapy (ECT) and frontal lobotomy. J.E. Pisetsky was one of many surgeons who advocated ECT for phantom pains. In 1946, he admitted that its effectiveness might be due to a host of factors, including:

changes in the oxygen-carbon dioxide ratio, changes in the vascularity of various brain areas, changes in the blood pressure, velocity of blood flow, changes in the chemical contents of the blood, and changes in the cellular structure of the cerebral cortex.

However, Pisetsky also speculated that the painful treatment might work simply by 'jar[ring] the apathy or inertia which prevents the individual from facing reality'.<sup>50</sup> Given the frequent references in Hopkinson's medical files to his self-centredness, he might have been considered to be a candidate for these radical treatments. However,

lobotomy for phantom limbs was much more common in America than Britain and Hopkinson was lucky to be treated by Dr Leon Gillis – the main physician at Roehampton – who happened to be opposed to such radical interventions. As Gillis concluded in his widely-admired textbook *Amputations* (1954):

it is doubtful if such procedures are justifiable, as they do not in themselves abolish the perception of pain, but merely produce changes in the personality of the individual. The change is mostly one of lessening drive in initiative.

Gillis also disparaged such surgery on the grounds that it ‘dull[s] the patient’s mind’.<sup>51</sup> This should not be taken to mean that Gillis did not believe that stump and phantom pains were primarily psychiatric problems. He accepted that patients who were lower on the ‘phylogenetic scale’ or were ‘highly intelligent, sensitive’ were more at risk of developing phantom pains compared to ‘more plethoric, unimaginative individuals’. However, he warned that ‘fear of accusation of insanity’ made the amputee:

reluctant to talk about his symptoms and he prefers to hide them until he can no longer bear them. This may result in gross mental disturbance, and the sufferer of a phantom limb is often regarded as psychotic.

In other words, Gillis was one of those rare physicians who believed that long-endured suffering could *cause* psychiatric problems as well as being a sign of such disorders. He advised physicians to reassure amputees that, despite having a psychological etiology, their pains were ‘very real’ and would ‘eventually’ fade.<sup>52</sup>

Aside from reassurance (which even Gillis acknowledged lost its efficacy for men like Hopkinson, who had experienced decades of continual suffering), what therapies were offered to Hopkinson? In the four decades between the 1940s and his death, he was treated by physicians on both sides of a major divide in the treatment of stump pain – in short-hand, this was the difference between those who focused on the brain’s reaction to painful stimuli (‘centralists’ or cerebralists) and those who were peripheralists (the painful sensations originated from ‘excitation of nerve ends’ in the scar or stump).

Cerebral theorists placed their bets on the efficacy of neurosurgery. On 23 November 1943, Geoffrey Jefferson, the ‘doyen of neurosurgeons’

who had conducted significant research (albeit unpublished) on phantom limb pain during the First World War and into the 1920s, examined Hopkinson.<sup>53</sup> He reported that Hopkinson experienced phantom pains 'really badly for a few hours every two months or so. It is then almost unbearable, he takes dope and it comes under control'.

Jefferson offered Hopkinson an alternative, radical treatment: chordotomy (also spelt cordotomy),<sup>54</sup> a treatment winning many medical converts from the 1940s. Chordotomy involved dividing the pain pathways in the spinal cord, thus 'interrupting the pathways of the painful impulses in order to abolish or modify their effects on the sensorium, either before they reach it or in the brain itself'.<sup>55</sup> Many neurosurgeons believed it could reduce or even eliminate intractable pain.

A particularly eloquent defence of chordotomy was mounted by Murray A. Falconer, the Director of Guy's Maudsley Neurosurgical Unit. For Falconer, the effectiveness of the treatment was itself proof that phantom limb pain was not 'a psychological disturbance'. Falconer did admit that, prior to the operation, some of his patients were 'greatly demoralized by pain, and were perhaps unstable individuals', but, he insisted, they were no more disturbed than patients who suffered from 'other organic painful conditions, such as trigeminal neuralgia'. Indeed, he continued, psychiatrists had been able neither to 'find any significant psychogenic features' in phantom limb patients nor to relieve suffering by psychotherapy. As for any suggestion that performing a major operation might itself be curative for *psychological* reasons, he was dismissive: 'I find it difficult to believe', he scoffed, 'that in my hands antero-lateral chordotomy acted as a psycho-therapeutic procedure, when previous operative procedures on the stump had failed to give relief.'<sup>56</sup>

However, the effectiveness of this surgery in alleviating the pain of phantom limbs had its critics. The operation required surgeons to guess how much of the spinothalamic tract in the spinal cord should be cut to maximise pain relief without disrupting other functions. In 1943 (that is, three years after Jefferson had offered the operation to Hopkinson), Jefferson had been persuaded to perform a chordotomy on a fellow surgeon, without success. As Jefferson's biographer reported, 'chronic pain is not usually relieved by this means. Jefferson must have known this and had operated against his better judgement'.<sup>57</sup> Perhaps the biographer was benefiting from hindsight. After all, Jefferson had clearly been carrying out the operation on other patients: in 1952, he reported mixed results in the chordotomies that he had performed on 12 sufferers of phantom limbs.<sup>58</sup> As critics of the operation pointed out, chordotomies often led to distressing side-effects, including 'defective

sphincter control', 'motor defect' and 'decubitus ulcers'; it should not be 'lightly undertaken in the chronically ill and elderly'.<sup>59</sup>

Jefferson did not say why Hopkinson 'does not desire an operation' (perhaps the chronically weakened 54 year old was warned of these rather daunting risks) and Jefferson was also willing to 'leave matters as they are' with Hopkinson.<sup>60</sup> After all, although Jefferson was a passionate neurosurgeon, he claimed that he never believed that 'operation is the only method of treatment ... There are surgeons who think so, but I was never one of them. I hold that man a bad doctor who has but one method of treatment'.<sup>61</sup> Once Hopkinson convinced him that 'he was in no danger of becoming a drug addict', Jefferson sent him for more traditional forms of treatment.<sup>62</sup>

However, after refusing Jefferson's offer of a chordotomy, Hopkinson's misery simply got worse. Even the Ministry of Pensions – which had been refusing his claim for increased compensation for decades – finally admitted that his war-related disabilities were deteriorating. In March 1949, the Ministry reassessed his medical state, upgrading his percentage of disability from 80 per cent to 90 per cent. They noted that he lived in constant distress, experienced phantom pains, did not have an artificial limb and was totally dependent on elbow-crutches to move.<sup>63</sup>

Clearly other treatments had to be attempted. This time, rather than turning to the knife, Hopkinson's doctors tried physical medicine. The first choice – prescribed in 1939 and 1949 – was anodal galvanism.<sup>64</sup> Although often used to alleviate disorders as different as trench foot, neuralgia, neuritis, lumbago and sciatica,<sup>65</sup> anodal galvanism was also prescribed for phantom pain (as P. Jenner Verrall, one of Hopkinson's physicians, attested in the *British Medical Journal*).<sup>66</sup> It worked primarily as a sedative. As one advocate explained, the doctor placed a positive electrode at 'the extremity of the affected limb with the negative [electrode] towards the nerve root'. Its sedative effect was:

explained by the hyperaemia induced by the current being more pronounced near the anode or positive pole. As sensory nerve endings are stimulated by chemical or physico-chemical changes, pain produced by the arrest or diminution of the blood flow may be relieved by any measure that increases the circulation in the part concerned.<sup>67</sup>

In Hopkinson's case, anodal galvanism did help – but only temporarily.<sup>68</sup>

By 1951, another physical, or 'peripheralist', remedy was being attempted. Percussion therapy was the brainchild of neurologist W. Ritchie Russell,

then based at the United Oxford Hospitals. Russell had a formidable reputation for his research on intractable pain. He claimed that 'percussion' was an effective way to banish stump pain. Just two years before he treated Hopkinson, he had shown a group of expert specialists on intractable pain a film illustrating his method of treating painful amputation stumps by repeated 'percussion' of the neuroma (tumours of nervous system tissue) with a mallet and wooden applicator.<sup>69</sup> As a physician who worked at Roehampton while Hopkinson was being treated explained, the mallet used was an 'ordinary, wooden carpenter's type' of about 1–1½ lbs in weight while the wooden peg was constructed from a broom handle or end of a crutch and was approximately six inches long. The peg should:

have fixed to one end a circular piece of metal, that commonly used for the legs of chairs, etc., known as the 'dome of silence' serves very well – and to the other end a crutch or walking stick rubber. The smooth metal covered end of the peg is applied firmly to the palpable neuroma, tender area or scar ... and the other rubber covered end is struck with the mallet as vigorously and as rapidly as is possible without giving the patient undue discomfort.<sup>70</sup>

In a different version, an electric vibrator was used in a similar way. Once the amputee's stump or phantom pains had begun to subside – which generally took between 24 and 48 hours of treatment, although it could take a month – he would be taught how to do it himself at home.<sup>71</sup>

How did percussion work? In 'Painful Amputation Stumps and Phantom Limbs: Treatment by Repeated Percussion to the Stump Neuromata' (1949), Russell explained that 'treatment at the periphery' (as opposed to the centre, as with Jefferson's surgery) was likely to be effective for three reasons: first, he observed that, even in normal limbs, nerve endings would be 'rendered insensitive by occupations which involve repeated minor trauma or prolonged firm pressure on the skin'; second, 'conduction of a mixed nerve is easily interrupted by repeated pressure', without causing pain; and, third, 'the regenerating nerve fibres in an amputation stump are likely to be no less vulnerable to minor trauma or pressure than are normal nerves and nerve endings'. Russell recommended that an amputee should carry out this procedure twice a day – he would, literally, be 'learning to knock away his phantom pain whenever it was troublesome'.<sup>72</sup> It was, the *British Medical Journal* pronounced in 1949, a 'refreshingly simple method'.<sup>73</sup> Indeed, it is still used by some stump pain sufferers today.<sup>74</sup>



Although a disarmingly simple procedure, proponents acknowledged that it was important that percussion treatment was initially carried out within a hospital ward. As a rehabilitation physician at Roehampton remarked in the 1950s, the rationale of percussion treatment had to be explained to the patient, since 'some are inclined to be a little intimidated by the prospect of their painful stumps being assaulted by what at first appears to them to be a somewhat violent procedure'.<sup>75</sup>

Russell reported that Hopkinson had benefited from percussion treatment when he had been admitted to Queen Mary's Hospital at Roehampton. While in the ward, Hopkinson experienced 'much less sensitivity in the stump than before, and has had no severe bouts of pain since leaving'. However, Russell warned that there was a serious danger of a relapse, since Hopkinson had subsequently 'discontinued trying to treat himself'. The fact that he had been 'supplied with an applicator but no mallet' was not encouraging. Russell recommended that Hopkinson should be urged to 'persevere with self-administered percussion treatment', even though he would have to buy the mallet with his own money.<sup>76</sup> Indeed, R.D. Langdale Kelham (who had concluded his study of 200 men with phantom limb pain at Roehampton three years earlier) had someone remarkably similar to Hopkinson in mind when he attempted to explain the high relapse rate in phantom pains after the amputees left the hospital. Although percussion treatment had been effective in the wards, Kelham observed, a follow-up study revealed that only 30 per cent had been able to control their pain at home. Kelham ascribed this high relapse rate to the fact that:

Such cases often have unstable personalities, are often paranoid in type, their experiences in the past have been discouraging and have only served to strengthen the conviction that they have something seriously wrong in their stumps and that nothing can be done to help them. They do not view new methods of treatment with any optimism and their whole attitude becomes negative and defeatist ... As soon as they are removed from the influence of in-patient conditions with its constant encouragement, they were foredoomed to relapse, because, like some of the initial failures, they were unsuitable material in the first place.<sup>77</sup>

Whether Hopkinson's problem could be blamed on his physiology or psyche, percussion treatment eventually failed. Five years after his consultation with Russell, a medical report concluded that mallet and peg treatment had 'little lasting effect' on his stump pain.<sup>78</sup> Although

he reported that the *electric* vibrator version of the mallet and wooden applicator did help relieve some pain, his physicians were increasingly frustrated by their inability to completely alleviate it. Comments on his poor psychological adaptation began appearing more frequently. In 1958, for example, a medical report stated that Hopkinson was still experiencing a 'jumpy stump ... Finds holding it helps ... psychopathic personality'. He quoted Hopkinson as saying 'I am frightened of the pain. I do not mind making scenes'.<sup>79</sup> Or, as another doctor noted a month later, Hopkinson 'probably does get pain', but it was '100% aggravated by his poor mental adaptation & aggravated by low pain tolerance'. In an exasperated tone, he concluded: 'One wonders whether if it is worth bothering with him but ... he is firmly convinced that vibrators do help him – even if it is a mental placebo.'<sup>80</sup> This was the kind of cynical 'complacency' that the great pain surgeon René Leriche might have been alluding to when, in 1939, he wrote about the 'rather bizarre geography of subjective symptoms' that men with painful stumps described. 'As is usually the case when we fail to understand anything', he thoughtfully concluded, 'we ascribe an important part to imagination and emotion.'<sup>81</sup>

### **Ageing amputee**

Hopkinson's predicament was representative of a wider trend in British society after the Second World War. All the physicians who treated him were aware that Hopkinson was part of a much bigger problem associated with 'elderly amputees'. In 1953, it was estimated that there were nearly 24,000 men (and one woman) in Britain who had lost one or more limbs as a result of war injuries that had occurred during the First World War or before.<sup>82</sup> Amputees from the First World War were now elderly and the newly established National Health Service was struggling to deal with them.

Awareness of this crisis led Donald Stewart McKenzie – who had examined Hopkinson in the 1940s – to conduct research on this constituency of disabled men. It was eventually published as 'The Elderly Amputee' in 1953. McKenzie began by noting that techniques for rehabilitating amputees had 'evolved primarily in relation to active ex-Service men' – in other words, they had been devised to restore young, fit men. What physicians and pension authorities were facing by the 1950s, though, was a more 'enfeebled' set of patients for whom previous approaches simply could not be applied. McKenzie placed some of the blame for the lack of progress with this new generation of elderly amputees on 'unwarranted optimism'. Patients had been taught to *expect* that they

would be able to walk with a prosthesis 'without effort' and were consequently demoralised when faced with the magnitude of the challenges facing them.<sup>83</sup> More importantly, however, McKenzie emphasised the importance of 'environment'. In his words:

We not infrequently see patients who have made good progress and who are discharged from the walking school able to control their prosthesis and to look after themselves fairly well. Yet when we see them on follow-up we find they have hardly worn the prosthesis, and the musculature has lost tone to the extent that they can no longer control it. Inquiry reveals that they live alone, perhaps in an upstairs flat, or it may be that they simply lacked the incentive to make the effort to persevere.<sup>84</sup>

McKenzie's description closely matched Hopkinson's circumstances. After all, Hopkinson had been able to control his pain effectively using the 'percussion' method while in hospital, but lapsed when he returned home. He was never able to wear an artificial limb. By the time McKenzie was writing, Hopkinson perfectly fitted McKenzie's profile of the 'elderly amputee' who complained of chronic stump and phantom pain, shell shock and was reaching an age when he was finding it difficult to clean himself and his flat.<sup>85</sup>

However, two final attempts were made to treat Hopkinson's stump pain. On 17 October 1956, Leon Gillis, the limb expert who had published his highly influential book *Amputations* two years earlier, took on Hopkinson's case. In *Amputations*, Gillis had warned that:

Pain is a symptom, and however important it is to the patient to be given relief from his pain, it is more important still that the cause of a painful stump should be accurately determined before any treatment is started.

Gillis strongly believed that treatment needed to encompass 'psychological as well as physiological factors' and while he conceded that the 'psychological element may play an insignificant part ... on the other hand it may be the sole cause of the pain', particularly in 'a world which is fraught with economic crises, social maladjustment, anxiety, and fear'. These external influences acted as 'powerful factor[s] in increasing the perception' of stump pain.<sup>86</sup>

Gillis immediately observed that there was an emotional element to Hopkinson's suffering. He reported that Hopkinson 'thinks the pain is

affected by change in weather and also “when he gets annoyed”. The only way forward was to get a full range of pain and limb specialists together to investigate what had been going wrong for 39 years. In October 1956, Gillis enlisted the help of the Painful Stump Panel.<sup>87</sup>

Hopkinson was admitted to Queen Mary's Hospital where he was to remain for a month. In the Panel's report, they observed that Hopkinson was a ‘big man’ with a very short stump. An x-ray of his stump showed ‘some bony spurs’, often believed to cause pain. Each of the specialists gave their diagnosis and each responded predictably according to their specialism. Psychiatrist Guy Randall, who had co-authored an article entitled ‘Psychiatric Reactions to Amputation’ (1945), believed that ‘there was a considerable psychiatric factor in this case’. He noted a ‘family background of instability’ and claimed that Hopkinson's irregular employment record reflected ‘personal instability’. The only solutions, Randall claimed, were ‘sedative therapies, e.g., Equanil, Largactil or Phenergan alone or with barbiturates’ since there was ‘little or no chance of altering his personality or reaction type’.<sup>88</sup> Consultant neurologist Dr Aldren Turner recommended that Hopkinson return to percussion treatment, supplemented with analgesics ‘during severe attacks’, while consultant orthopaedic surgeon Mr Harding ‘wondered whether his prostatectomy in 1951 may have been related’. The summary ended by noting that Hopkinson had undergone percussion therapy and was taking the mild tranquilisers Equanil (meprobamate) and Sonalgin, which contained the sedative butobarbitone and was advertised as being ‘valuable for the relief of nervous tension’.<sup>89</sup> The medication seemed to work. The Panel reported that Hopkinson ‘now feels able to cope with life again and requests discharge’.<sup>90</sup>

Clearly, the 1956 prognosis was optimistic: within two years, Hopkinson was yet again experiencing severe pain in his stump and had serious mobility problems.<sup>91</sup> In March 1964, Dr Ian H.M. Curwen, Consultant on Physical Medicine, took over Hopkinson's case. Curwen reported that 75-year-old Hopkinson ‘experiences pain for one or two days about every four weeks ... He says that his prostate has been “partly removed” ... the whole of his spine moved poorly and he probably has gross spondylosis’, or degenerative osteoarthritis.<sup>92</sup>

Once again, Hopkinson was admitted into the rehabilitation ward in Roehampton. This time, a different peripheralist treatment was tried. Between 22 April and 11 May 1964, Lignocaine (a common anaesthetic, otherwise known as Lidocaine and Xylocaine) was injected into his stump daily. The medical record observed that: ‘Immediately following injection he felt a pleasant warm sensation in the stump. Nocturnal

discomfort in the stump was reduced and he had one incident only of stump pain during his two weeks' admission. This was less severe than usual and lasted only a few hours.'<sup>93</sup> In July 1964, Hopkinson was still improving. He 'gets a little stump pain [but] never severe. Minutes only now and never hours. Has less "rawness" in his short phantom'. The injections seemed to be effective.<sup>94</sup>

The reason for the success of Xylocaine injections was disputed. Hopkinson's former doctor – W. Richie Russell, the percussion specialist – explained that when dealing with patients with intractable pain, it was not necessary to know precisely *why* a certain treatment worked, so long as it did. He reminded his fellow doctors that it made 'no sense saying that one pain is functional and one organic' because 'all pains are both physiologically determined and functionally graded according to a wide variety of personal factors'. Even when the pain was largely the result of emotional factors, physical treatments might work. In the case of percussion treatment, if the 'discharging neuromata' were 'inactivated', the patient would report some alleviation of his pain even though emotional responses meant that the pain would never be totally eradicated. Similarly, Russell continued, Xylocaine injections given into the 'anatomical area concerned in some way with a chronic pain' might help to break the 'vicious cycle' by providing temporary relief. In this way, the local anaesthetic would have a 'curative as well as a diagnostic value'. This was why he was even willing to endorse 'old methods of treating pain with electricity' (that is, the galvanism treatment Hopkinson received in 1949) since, at the very least, it would provide 'a physiological distraction' that might actually reduce suffering. As Russell wittily contended at the very end of his paper: 'I would suggest that the successful therapist for intractable pain treats the problem like a game in which he endeavours to outmanoeuvre the tricks played by the C.N.S. [central nervous system] of his patient.' The therapist:

had many different moves he can play. Some depend on simple procedures which checkmate the mechanisms, but others are assisted by the deception of the poker player and the confidence of the quack. I may add that my colleagues ... think that I am too optimistic about the results of treatment, but I think it important to be over-confident in treating pain, so I make no apology.<sup>95</sup>

Russell believed in the power of mind over the body: the problem in Hopkinson's case was that he was too disillusioned and too disenchanted

to believe in any positive outcome, let alone the intentions of physicians working for any governmental ministry.

It took another three years before the Medical Board finally accepted what Hopkinson had been telling them all along. At the age of 84 and 56 years after he had been wounded in the war, they accepted that he really was 100 per cent disabled. He was judged to be 80 per cent disabled because of his amputated leg, 6–14 per cent disabled due to the injury to his left elbow and 10 per cent disabled because of ‘foreign bodies’ (that is, bomb fragments) in his left shoulder, knuckles and wrist, the presence of which his physicians had always denied. They also reported that he had a head injury, osteoarthritis in his right wrist and thumb, and ‘callosity’ in the palm of his hand due, no doubt, to more than half a century on crutches.<sup>96</sup> He was offered physiotherapy.<sup>97</sup> A report by the Ministry of Social Security on 28 January 1974 noted that Hopkinson was ‘depressed at times from pain’ and he was experiencing ‘*Severe phantom pains by day with stabs of stump pain*’. After a ‘friend’ from the British Limbless Ex-Service Men’s Association offered to take him to Brighton for a holiday if the Ministry would pay the cost of petrol,<sup>98</sup> Hopkinson pleaded with the Welfare Officer to allow him to go because ‘I am tired of sitting alone in my Bedroom ... except for 2 hours outing on Sundays & it is bad for my morale’.<sup>99</sup> Hopkinson died on 17 December 1974. He was 85 years of age and had lived for 57 years with war injuries. Under cause of death, the death certificate recorded: ‘SENILITY, MYOCARDIAL DEGENERATION AND FAILURE.’

## Conclusion

From the age of 28 until the age of 85, Frank Hopkinson had lived in almost constant pain. One of his doctors had reported that he:

gets a lot of twitching & jumping in the stump – like electric shocks – makes him shout & gets a temperature. Comes on at irregular times – about 4 times a year – often with a change in the weather – or if he goes to stay with a friend. Emotional – cries if he hears a hymn or if he can’t get a seat in a bus. Very irritable; cannot concentrate; unreliable. Sleep good. Single. Has tried to get a job, but always turned down.<sup>100</sup>

Although Hopkinson’s symptoms changed relatively little throughout his life, his sufferings cannot be summarised under any single headings. His pain was acute, chronic, physiological, psychological and

emotional; it gripped him within hospital wards and when he was 'sitting alone in my Bedroom'. He struggled to distinguish the experience of pain from the pain of experience. On the surface, he should have been able to elicit sympathy: he was a white male who had been born into a privileged family and had served as an officer in war. In fact, his class status was a further cause for agony. As one doctor reported: 'The officer is a man of sensitive temperament and a loss of his leg affects him more than one of coarser fibre. He ... hates people looking at him and sympathizing with him.'<sup>101</sup> Those physicians who witnessed his pain often attempted to sympathise and provide succour, but their inability to solve his crises eventually led each of them to turn away – sometimes in despair, at other times in annoyance. The invisibility of his wound – his stump seemed to be 'normal' and the limb that burned like fire did not exist – trumped all scientific theorising. Theories about physiological pain pathways, psychiatric pathologies, constitutional inheritances, psychosomatic symptoms and even 'old womanish' sensitivities failed to ease suffering that was anything but 'phantom'.

## Notes

1. I am immensely grateful to the Wellcome Trust for its generous financial support in setting up the Birkbeck Pain Project (BPP). The research would not have been possible without the intellectual support and inspiration of my two colleagues in the BPP, Dr Louise Hide and Dr Carmen Mangion.
2. Filippo de Vivo, 'Prospect or Refuge? Microhistory, History on the Large Scale. A Response', *Cultural and Social History*, 7(3) (2010): 387. For good introductions, see Peter Burke, *New Perspectives in History Writing* (University Park: Pennsylvania University Press, 1991); and C. Ginzburg, 'Microhistory: Two or Three Things I Know About it', *Critical Inquiry*, 201 (1993): 10–35.
3. Seth Koven, 'Remembering and Dismemberment: Crippled Children, Wounded Soldiers, and the Great War in Great Britain', *American Historical Review*, 99(4) (1994): 1169.
4. Interview of Giles and Ben Hopkinson, 6 November 2012.
5. 'Report of Medical Board', National Archives WO 339/12060 (P1030322) and 'Special Hospitals for Officers', 7 March 1924, National Archives, PIN 26/21799.
6. Medical reports, National Archives, PIN 26/21799 Part 2 (P1040118–P1040119).
7. Letter from Hopkinson, 4 December 1918, National Archives WO 339/12060.
8. E. Muirhead Little, *Artificial Limbs and Amputation Stumps. A Practical Handbook* (London: H.K. Lewis and Co., 1922), 23. The percentage was 73 per cent. For a longer discussion of war wounds, see Joanna Bourke, *Dismembering the Male: Men's Bodies, Britain, and the Great War* (London: Reaktion, 1996).
9. Muirhead Little, *Artificial Limbs*, 24.