FREDERICK W. LOWNDES, MRCSE AND SURGEON TO THE LIVERPOOL LOCK HOSPITAL: PROSTITUTION AND VENEREAL DISEASE IN THE1880S¹

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The aim of this paper is to analyse the perpetuation of the myth of the fallen woman in the rescue work and the cure of prostitutes in Liverpool in the 1880s. To this end, Frederick Lowndes' 1886 publication, Prostitution and Venereal Diseases in Liverpool, will be discussed as an example of a text written by a medical authority concerned with sexual promiscuity and the spread of venereal disease. Prostitution had cultural and moral implications for Victorians, and prostitutes represented a threat to middle-class society as the very image of vice and public disorder itself. Lowndes offers an overview of the issue for the years leading up to the publication of his pamphlet, dealing with issues like the role of brothels and other places of accommodation for prostitutes, the causes of prostitution in Liverpool and the classification of these women into different categories. These were also matters of concern in the earlier decades of the Victorian era and they echo some of the ideas of previous moral reformers and medical men concerning the Great Social Evil. Lowndes had also published other pamphlets about venereal diseases and lock hospitals such as Prostitution and Syphilis in Liverpool and the Working of the Contagious Diseases Acts, at Aldershot, Chatham, Plymouth, and Devonport (1876), The Extension of the Contagious Diseases Acts to Liverpool and Other Seaports Practically Considered (1876) and Lock Hospitals and Lock Wards in General Hospitals (1882), together with a number of articles in specialised journals

such as *The British Medical Journal* or *The Lancet*. This paper sets out to analyse and compare Lowndes's writings on prostitution and venereal disease with a view to ascertaining whether there was any evolution in his thinking in those last decades of the Victorian period and whether any contradictions can be found in his writings.

In the 1860s the three Contagious Diseases Acts were passed; these had become the object of debate in the different discourses of the time in the 1870s. A feminist and social reformer established in Liverpool, Josephine Butler, became the charismatic leader of the repeal campaign that followed the promulgation of these Acts, designed to avoid the spread of venereal disease in the armed forces. The new law, then, required women who were suspected of being 'common prostitutes' to undergo compulsory medical examination; if they were found to be venereally diseased they were sent to a lock hospital where they had to remain till cured. Lock hospitals were created to control and cure 'deviant women'. One of these hospitals was the Liverpool Lock Hospital.² The year before Lowndes's Prostitution and Venereal Diseases in Liverpool, the Criminal Law Amendment Act was passed in Parliament to put an end to child prostitution and white slavery. This followed the social uproar caused by the publication of the "The Maiden Tribute of Modern Babylon" in the Pall Mall Gazette by W.T. Stead. According to this article the virginity of children was sold in London's dens of vice to aristocratic villains who did not care about the suffering of the innocent poor.³ The role of the Social Purity Movement in the application of this Act and its influence on the ideas about the Great Social Evil in the years before the turn of the century were considerable. In this context, the function played by local laws in the containment of this public vice and of the Liverpool Lock Hospital in the treatment and cure of the diseases considered to be the result of prostitution will be analysed in the light of Lowndes's text and ideas. My intention is to prove that the continuation of the tendency to seclude deviant elements of society in an attempt to reform them, together with their classification and indoctrination were still present in the medical and moral discourses of the latter part of the Victorian period in a postmodern and poststructuralist sense.

For that purpose an understanding of Foucauldian notions concerning deviancy and discipline become essential together with Butlerian ideas about gender and sexuality in the context of Victorian respectability and womanhood. This notion of respectability was particularly associated with the innocence and purity generally attributed to women and children. Foucault's two foundational texts *Discipline and Punish* (1975) and *The History of Sexuality, Part I* (1976) offer the opportunity to interpret the treatment of prostitutes in the light of the discourses that dominated the Victorian period. Foucault considers that societies are not static

structures and that they are constructed on discourses of power that pervade them. The body becomes essential in this philosophical system and constitutes the object of surveillance and classification. As a consequence bodies form part of spatial relations that allocate them specific places and classify them as different depending on their gender, sex, class and race. The whole system is based on binary oppositions that allow those in power to exert control on 'deviant bodies' in multiple and complex ways (Foucault 1990: 92-98). Similarly, bodies show resistance to the way in which they are disciplined by institutions of power such as asylums, prisons, hospitals, schools, etc. As a result, disciplinary power becomes the most basic form of punishment for deviant bodies like those of prostitutes, trying to create useful and docile bodies that conform to the norms (Foucault 1979: 135-137). All these notions clearly apply to the lock hospitals and lock wards of the nineteenth century. Butlerian ideas (Gender Trouble: Feminism and the Subversion of Identity, 1990; Bodies that Matter: On the Discursive Limits of "Sex" 1993; and Undoing Gender, 2004) about gender performance and about gender acts as being 'citational' are also significantly relevant to notions of women's respectability and behaviour. Victorian women were supposed to conduct themselves according to the specificities of their gender which constricted them to the private sphere and to ignorance of all sexual matters. In this sense, they had to perform their role as a member of the female sex and be opposite and complementary with respect to the male sex. In other words, men and women had to perform their own gender roles by citation, that is, by the repetition of forms of behaviour that were appropriate to their sex. Butler establishes the idea of gender being a social and cultural construct which consists in repeating practices conducive to a certain gender identity. But, according to Butler, gender performativity is not only 'citational'; it also has aspects of theatricality as we represent gender for our social peers who constitute our audience. Therefore, women who did not comply with what was expected of them as the weaker sex were regarded as being outside the norm and

Between the passing of the three Contagious Diseases Acts in the 1860s and their suspension in 1883 and later repeal in 1886, important changes were brought about by the state and moral and medical authorities. State medicine was in decline in the 1870s and by the 1880s state authorities had lost control of the regulation of sexuality. Traditional sanitary principles had been contested during the repeal campaign and moralists were bent on redefining the ways in which sexual issues would be approached. With the Local Government Act of 1871, the Privy Council Medical Office and the Poor Law Board became one and formed the new Local Government Board. This Board was more concerned with the investigation of epidemics than with other areas of social intervention. Thus, it was moralists and

this was the case of prostitutes.

feminists that became social authorities as far as sexual politics and policy in the last decades of the nineteenth century were concerned. They used a powerful language to oblige the state to take legislative measures, and according to them, "chastity, continence and self-control" were the foundation for sexual progress, and reason and the laws of human nature were essential in the process (Mort 2000: 83-87). This meant that medical authorities began to lose control of the social discourses concerning morality and sexuality, and social purists became the leaders in the fight for respectability and restraint in sexual matters. Their views not only affected women's behaviour but it was also aimed at restraining the male sexual drive. And not only this, the education of the young boys and girls from all social backgrounds in sexual matters became an important means of making society decent and clean. The idea was to have a single standard of sexual morality (Hall 2013: 30-55). However, as I hope to prove, many of the concepts and ideas connected with women's sexuality and respectability as reported by Frederick Lowndes had not changed that much. By the same token, I believe that he does not acknowledge the new role of social purists in the regulation of sexuality in the last decades of the nineteenth century, but rather he expresses his fears about the lack of efficient measures to curb the increasing numbers of prostitutes in Liverpool and the spread of contagious disorders.

The Repeal Campaign (1860-1876) marked a turning point in the history of regulation of prostitution in the UK. Josephine Butler was a middle-class woman who married George Butler whose life was marked by misfortune. She first lived in Oxford with her husband and children, but when her only daughter died in an accident, the Butlers moved to Liverpool. There, Mrs Butler decided to devote her life to the rescue of fallen women and prostitutes, founding her Home of Rest. She believed that both men and women were on equal terms regarding spirituality and saw poverty as the main cause of prostitution in women (Butler 1954: 56). After her conversation with her friend Elisabeth Wolstenholme, she decided to embark on the crusade against the CD Acts with the support of her husband. Thus, she became the leader of the Ladies National Association for the Repeal of the Contagious Diseases Acts.

The Acts counted on the support of upper- and middle-class men, religious and academic authorities, many medical men and the police. However, feminists were against the compulsory physical examination of prostitutes and the degradation and discrimination that this implied. Contrary to male medical opinion, women repealers believed that it was men who spread venereal disease. But Josephine Butler also counted on the support of her middle-class sisters and even working-class men and women who were outraged by the humiliation their daughters and sisters were suffering. The idea was to keep the military and the male population

free of disease without taking into account the loss of dignity that such legal measures represented for the working classes (Boyd 1982: 78).

Nonetheless, the Repeal Campaign had two outstanding moments: the Ladies' Manifesto of 1870 and the Select Committee of 1879. In the first instance, the Women's Protest contained eight points that basically argued that women's reputation and freedom were in the hands of the police: only women and not men were punished for immoral sexual behaviour; the results of the Acts and proposed measures that promoted social reform were called into question; this stage culminated with Butler's unfortunate evidence before the Royal Commission of 1871 created to ascertain the application of the CD Acts (Butler 1954: 81-85). As a result there was an attempt in 1872 to pass a Bill, known as the Bruce Bill, to do away with the Acts but with no success. It was later, when another Select Committee was established in 1879 that the situation began to show signs of amelioration. This time, Josephine Butler's evidence was much wiser and balanced and the National Association's effort to make Parliament hear public opinion in favour of abolition was successful. The Contagious Diseases Acts were first suspended in 1883 and then repealed in 1886 (Bell 1962: 157-163). I think it is more than remarkable that all these events were taking place at a time when Lowndes was writing his pamphlets in defence of the application and extension of the CD Acts.

Lowndes was a member of the Royal College of Surgeons of England and Surgeon to the Liverpool Police and the Liverpool Lock Hospital at the time of the publication of his book on prostitution and venereal disease in Liverpool in 1886. He had previously worked as an honorary Assistant Surgeon to the Ladies' Charity and Lying-in Hospital and as the District Medical Officer of Liverpool Parish. Before that and according to his 1876 pamphlets he had been a local honorary Secretary to the Association for Promoting the Extension of the Contagious Diseases Acts. He was therefore very much involved in the medical movement for reform and in the treatment of illness in the poor. Lowndes had published two pamphlets in 1876, Prostitution and Syphilis in Liverpool, and the Working of the Contagious Diseases Acts, at Aldershot, Chatham, Plymouth and Devonport and The Extension of the CD Acts to Liverpool and Other Seaports Practically Considered as well as a volume entitled Lock Hospitals and Lock Wards in General Hospitals in 1882. In the first pamphlet he dealt with the issues of prostitution and venereal disease in Liverpool and the results of the application of the three Contagious Diseases Acts in some military and seaport towns; the social conditions of the individuals involved in the process was also analysed. In the second one, he considers the possibilities of extending the system of regulation to all British seaports —including Liverpool— as a measure to stop the effects of sexually

transmitted diseases in seamen following to a certain extent the European model of regulation. Finally his volume *Lock Hospitals and Lock Wards in General Hospitals* discusses the aims for which lock hospitals had been established: prostitutes and men who had been guilty of some form of immorality were the supposed beneficiaries of these voluntary institutions. In other words, lock hospitals were the places where patients were treated for ailments that were the result of "their own vicious indulgence". Lowndes also talks in his 1882 publication about the main lock hospitals in the country such as the London Lock Hospital, the Westmoreland Lock Hospital in Dublin, the Glasgow Lock Hospital, the Manchester and Salford Lock and Skin Disease Hospital, the Bristol Lock Hospital, and the Liverpool Lock Hospital. He also mentions some lock wards in general hospitals and infirmaries which were specialized in these kinds of patients (Lowndes 1882).

Focusing on the Liverpool Lock Hospital: the old Liverpool Royal Infirmary was opened in 1749 and then enlarged in 1752. It was the only institution in the city which accommodated patients of both sexes suffering from venereal diseases. The Infirmary was completed in 1824 with two separate wards for male and female patients with twenty-five beds each. With the increased demand for accommodation of this kind the Liverpool Lock Hospital was erected in 1834 and became a part of the Royal Infirmary under the management of the same committee. Nonetheless, the Hospital had its own surgical staff, superintendent, matron, nurses and so on. Their efforts were directed towards the rescue of fallen women, to induce them "to give up their wretched life". Married women, young females who had "only just commenced an immoral life" and prostitutes were admitted (Lowndes 1882: 14-16). Lowndes makes a declaration of how he regarded his activity (and that of the hospital) in curing fallen women suffering from syphilis or gonorrhoea:

And I may here repeat, that in every one taken from off the streets while in a state of disease, and prevented from following her trade, a humane act is done to her, since she is prevented from making herself worse. At the same time she is prevented from spreading her disease to innocent as well as guilty people. (Lowndes 1882: 17)

It is clear from his words that he was in favour of regulation and that he considers the work done by these institutions as necessary to stop the spread of venereal disease and to avoid contagion. Both the decent and the immoral were affected, while the fallen woman had the further advantage of being taken off the streets and offered the change of leading a better life. Lowndes, however, laments that the limited accommodation makes it impossible to separate decent women infected by their husbands from the prostitutes who had voluntarily embarked on that way of life (1882: 15-16). The same ideas can be found in the Introduction to his *Prostitution and Venereal Diseases in Liverpool*, despite the fact that he acknowledges

the existence of certain sectors in society who are against the application of harsh measures against dissolute women as these implied the recognition of prostitution as a necessary evil. In the same fashion, they also thought that regulation was tantamount to allowing all parties to behave immorally with no fear of consequences (Lowndes 1886: iii-iv). As I have stated before, this was one of the arguments put forward by the Ladies' National Association during the Repeal Campaign, but there is a clear contradiction in viewing prostitution as a necessity for the male military population and the benevolent idea of rescuing fallen women. Lowndes wanted to keep the prostitutes clean for the health of the (all-male) military personnel while simultaneously endorsing the idea of redeeming these fallen women from their sinful ways. As long as there was a demand, there had to be an offer

The ideology of the double standard which had become prevalent in the first decades of the Victorian period was still conspicuously present in the 1870s and 1880s, maintaining gender stereotypes, so that "femininity became identified with domesticity, service to others, subordination and weakness, while masculinity was associated with life in the competitive world of paid work, strength and domination" (Purvis 1991: 4). The lives and work of prostitutes was very much in discord with the kind of behaviour expected of respectable women whose main responsibility was to be good wives and mothers. Chastity and purity were the terms applied to ideal femininity, and women were supposed to be ignorant of sexual matters before marriage whereas men were supposed to have a natural sexual drive that they could not control. Thus, unchastity was a pardonable sin in men but not in women who fell into disgrace by an act of unchastity. Sex in married life was oriented towards procreation, but husbands could be allowed an escape to temper their carnal instinct (Mahood 1990: 4). In the case of children, innocence was thought to be their main moral trait and as such it had to be preserved. All the women who did not conform to these middle-class ideals were considered deviant, and this was the case of prostitutes and fallen women.

Working-class women were thus at the other extreme of the spectrum. The working class was the largest social class in nineteenth century Britain; all the members of the family had to work in order to earn enough money to survive (Perkin 1994: 169). Life was very hard and parents could not get involved in checking their daughters' sexual behaviour. And not only this, premarital sex was commonly accepted among some sections of the working class throughout the period; girls had to prove their fertility before getting married. For this reason, a considerable number of illegitimate children were in fact the offspring of commonlaw unions. These practices were embedded in whole communities. Marriage was looked on as a necessity for the husband and wife's joint and personal survival. The

fact that women worked as prostitutes was viewed as being part of the 'normal' sexual and economic exploitation of women, no more, no less, partly due to the women's restricted access to the labour market and partly due to sheer poverty (Perkin 1994: 178). Working-class women soon lost all interest in sex because of the fear of pregnancy and miscarriages and the lack of intimacy in a household full of children. Many of them were deserted by their husbands who were violent and often drunk. Their male partners frequently ran into debt or were in prison; or they were unemployed or simply died (Harrison 1977: 176-178). Despite all this, working-class women were believed to be sexually active, and the middle class tried to impose their moral values on them (Mitchell 1981: x-xIII).

Since Foucault's analysis of sexuality as a historical construct, social and cultural historians have characterised the Victorian period as a time when different discourses produced definitions for different sexualities. He introduces the notion of discourse as "the set of concepts, values, and practices that define, inform, and justify a set of social relations" and according to him, "the history of sexuality is the history of what certain discourses have said about sex" (Mahood 1990: 6, 8). The term 'common prostitute' first appeared in the text of the Vagrancy Act of 1824, having been applied since then to women who exchange sex for money, thus becoming a commodity themselves. The Great Social Evil, as prostitution was known, represented a threat to decent society affecting the morality of the middle-class. In this sense, both married men and young males were believed to be the victims of corruption in virtue of the existence of prostitutes. However, the category of prostitute was not fixed or internally coherent; it could define any woman who transgressed the bourgeois code of morality (Nead 1988: 93-95). As a result, the categories of prostitute and fallen woman were blurred in Victorian discourses.

In The Extension of the Contagious Diseases Acts to Liverpool and Other Seaports Practically Considered (1876), Lowndes makes clear his position towards the extending of the Contagious Diseases Acts to other districts not contemplated in the legislation. In his opinion, in large seaports like Liverpool, Bristol, Hull, Cardiff, Dublin, and Glasgow the application of the 1869 CD Act would be extremely beneficial. He gives proof of the benefits reaped in the places where the Acts have been enforced. In his words, these "districts are sufficiently numerous and variable to enable us to judge the effects of the Acts in a medical, moral, and social aspect" (8). The city of Liverpool contained an enormous floating population of seamen who were not married and resorted to the services of prostitutes when they were on land. He tries to explain that in areas such as Blackman's Alley or the streets around the Sailors' Home the conditions in which women ply their trade is not that different from those of the women in the registered districts. They are in a state of disease and degradation that calls for

some action to be taken (31). However, what particularly strikes me about this debate concerning the extension of the CD Acts is the degree of ignorance on the part of those opposing the system with regard to its results and the prevalence of venereal disease on British soil; Lowndes also sings the praises of the European system that provides more than ample hospital accommodation for venereal cases throughout the continent (38, 59).

Lowndes therefore recommends the extension of the CD Acts to Liverpool in his 1876 pamphlet, proposing a number of measures which constitute the conclusions of many years working on the issue and collecting data regarding prostitution and venereal disease. Since Liverpool was a large merchant navy port, a Board of Trade should be appointed to administer the Acts. In his estimation, the city police force were well able to ascertain the number of prostitutes working in the district (60). He also advocates the treatment of venereal disease in male patients with the creation of Sailors' Homes and the enlargement of hospital accommodation. The Sailor' Homes would be dispensaries on a self-supporting principle (each seaman paving a shilling for each visit); enlarged accommodation would mean more beds in hospitals for diseased men admitted on a voluntary basis. The same would apply to women, increasing the number of beds in the Lock Hospital but they would only be admitted as in-patients. The figures left by surgeons like Dr Lane show the positive impact of the Acts on the women admitted for compulsory examination, in contrast to the figures for those women admitted on a voluntary basis. Lowndes describes the situation using Lane's words: "the severe and shocking cases which are so frequently seen in the wards of voluntary lock hospitals are almost unknown in the hospitals receiving patients under these Acts" (46). This is because women usually apply for admission when the illness is in so advanced a state that they cannot continue with their work. He insists on the importance of refuges, homes and penitentiaries for fallen women, making the places attractive for women seeking for redemption and reform. His final suggestion is especially innovative: the medical examination of all merchant seamen on arrival and departure from Liverpool should be made compulsory. In the event of being found infected with venereal complaints, they should be sent to hospital (73-78).

When Lowndes talks in his *Prostitution and Venereal Diseases in Liverpool* about the causes of prostitution which relate to men, he mentions juvenile precocity and immorality among males of the middle- and the working-classes as two of the most important ones. Similarly, he states that medical practitioners see many young boys suffering from venereal disease. According to him, this early vice is the result of overcrowding and lack of separation of the sexes in the case of the poor, and promiscuity at school in the case of upper- and middle-class boys. He even declares that vicious habits at an early stage are very difficult to eradicate and "the vicious

boy, as a general rule, becomes a vicious man" (Lowndes 1886: 22-31). Another factor explaining the prevalence of prostitution, as far as male sexual behaviour is concerned, was the late age at which middle-class men married: between 25 and 40. Like the other social investigators of the previous decades, Lowndes attributes this promiscuous conduct to the male sex drive which made sexual continence virtually impossible where bachelorhood was imposed by the economic circumstances. At the same time he asseverates that there are men who decide to remain single and married men who do not respect the sacred vows of marriage. Finally, Lowndes touches upon intemperance as "a very frequent exciting cause of immorality in men" (Lowndes 1886: 22-31). Perceptions, then, of the causes of prostitution where male behaviour is concerned do not seem to have changed very much in the course of the nineteenth century.

Among the causes that led women to prostitution, most social investigators of the early Victorian period established poverty as one of the most compelling ones. Nonetheless, middle-class reformers focused their attention on causes that had more to do with working-class behaviour. For example, William Tait divided the causes that led women into prostitution into two kinds, natural and accidental. In his 1841 study Magdalenism. An Enquiry into the Extent, Causes, and Consequences of Prostitution in Edinburgh he contended that moral failings such as licentiousness, irritability of temper, pride, love of dress, dishonesty, love of property, and indolence were natural causes; in the same fashion, features of lower-class life, such as seduction, ill-matched marriages, low wages, unemployment, intemperance, poverty, poor training, obscene publications, and overcrowded housing could be described as accidental causes (Walkowitz 1991: 38). A few decades later, William Logan, author of The Great Social Evil; its Causes, Extent, Results and Remedies (1871) and a temperance reformer, put the emphasis on drink, although he shared William Tait's basic diagnosis of the causes of prostitution. He claimed that most prostitutes were dependent on gin and narcotics, and public houses had a serious responsibility in inciting male sexual instincts, making both these women and their clients drink to excess. Thereby, they profited from the sale of alcohol, as the existing licensing laws allowed them to stay open all day (Bartley 2000: 4, 6).

For Lowndes, many of these causes of prostitution were identifiable in Liverpool from the 1860s to the 1880s, but he believed that it was the immorality of the parents that explained the extreme youth of many of the girls. Like previous social investigators, he sees overcrowding, lack of parental control and the lack of supervision in mills, factories and workshops as causes of juvenile prostitution; at the same time, a craving for sex on the part of men and the evil influences of the street have to be taken into account. He also mentions ignorance, idleness and love of dress as characterising this kind of women. Many of them had been servants living a

life of complete drudgery and saw an escape in prostitution, but in his opinion, and in contrast to Logan, drink was not a major cause of prostitution in women. However, the seduction of a young woman desperately needing affection and the making and breaking of promises in many cases led to pregnancy and subsequent desertion by the man. Lowndes then gives credibility to the story of servants being seduced by masters, perpetuating the myth of the upper-class villain and the working-class victim that had been very popular in former years (Lowndes 1886: 22-31).

In this context, W.T. Stead's series of articles called "Maiden Tribute of Modern Babylon" published in *The Pall Mall Gazette* in the summer of 1885 came to validate the theory of the existence of child prostitution and white slavery; similarly, the belief in the existence of a corrupt aristocracy that had no scruples in paying for sex with children was endorsed. According to Stead,

It is, however, a fact that there is in full operation among us a system of which the violation of virgins is one of the ordinary incidents; but these virgins are mostly of tender age, being too young in fact to understand the nature of the crime of which they are the unwilling victims; but these outrages are constantly perpetrated with almost absolute impunity: and that the arrangements for procuring, certifying, violating, repairing, and disposing of these ruined victims of the lust of London are made with a simplicity and efficiency incredible to all who have not made actual demonstration of the facility with which the crime can be accomplished. (1885)

In these words, Stead denounces the trafficking of under-age working class women. This is the reason why he puts the emphasis on the innocence and ignorance of the victims who were sold by their own parents in many cases and become entrapped in the system of prostitution without having any choice in the matter. Stead also speaks out against the impunity with which these crimes were committed. As mentioned above, Lowndes contends in his Prostitution and Venereal Diseases in Liverpool that one of the most serious problems concerning public morality in this city was juvenile prostitution. The most important consequence of the social uproar that Stead's articles prompted was the passing of the Criminal Law Amendment Act of 1885 in which the main issues were the criminalization of procurement and white-slavery and the raising of the age of consent for boys and girls to 16. As a result, many brothels were shut down and brothel-keepers were prosecuted. Moreover, working-class parents could lose the custody of their children if they were suspected of being involved in the transaction (Criminal Law Amendment Act, 1885 (An Abstract)). In relation with this act, Lowndes mentions that in Father Nugent's delivery to the House of Lords' Committee regarding the prostitution of young girls he gave testimony of the very shocking character of these juvenile prostitutes in Liverpool, just as captain Alfred Eaton from the School Board had given evidence about child prostitution in the lower classes. They both attributed the situation to "the gross neglect of their parents". Lowndes declares

his position to be in support of this Act and considers that these 'basket girls' of Liverpool are the victims of the "most unmerited abuse" (Lowndes 1886: 21-22). In tune with the nineteenth century love of classification described by Foucault, there was a hierarchy of the different kinds of women who plied the trade (Foucault 1990: 17-35). The most widely accepted and accurate classification of the time was that of Henry Mayhew in his London Labour and the London Poor (1851), where he mentions several categories of these women. He divided prostitutes into six kinds, although he omitted the highest rank, that of courtesan. According to him, there were kept mistresses and prima donnas; women living together in well-kept lodging houses; women living in low lodging houses; sailors' and soldiers' women; park women; and thieves' women (Perkin 1990: 220-228). This classification was based mainly on the an observation of prostitution in London in the middle of the century, but does not differ much from what Lowndes affirms for Liverpool in the 1880s, According to him, Liverpool prostitutes could be divided into three groups: upper-class women who resided in their own houses, mostly situated on the outskirts of the city as 'kept women' or 'mistresses'; they were often intelligent and well educated and sometimes had some other employment or calling but wanted to avoid street-walking while practising prostitution. Of course, they were by no means free of disease but they shrank from entering the Lock Hospital to avoid being associated with a lower class of prostitute. For that reason, they sometimes resorted to private medical practitioners or chemists to conceal the fact that they were infected, and so spread the disease further (Lowndes 1886: 9-22).

The second comprised the largest group of women working as prostitutes in the city; they were well-dressed and resided in brothels in well-built houses in quiet and respectable areas mostly in the city centre. Some of them were lodgers paying for bed and board out of their earnings; others handed over their earning to the landlords in exchange for accommodation, food and clothing, becoming in effect their slaves. In this group Lowndes similarly includes "the painted dressy women, who frequent the lower-class theatres, music halls, singing and dancing saloons, etc" (Lowndes 1886: 9-22). In his view, these women were the most difficult to rescue and reform and were mainly responsible for spreading venereal disease. They lived a reckless life subject to intemperance and surrounded by dirt and neglect, which favoured contagion. He saw them as the propagators of sexually transmitted diseases, but he admitted that these were infected in the first instance by men in contrast to the medical opinion of the earlier Victorian discourses, Some women in this group resorted to the Liverpool Lock Hospital where it was easier for them to obtain admission; the poorer ones sought admission to the lock wards of the workhouse; finally others obtained treatment from medical practitioners or chemists enabling them to continue their trade with a minimum of inconvenience.

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The third group that Lowndes mentions was made up of the lowest class of prostitutes that clustered together in streets in the north of Liverpool, in Toxteh Park or in the south. They could be also found in the city centre; all these areas were known as 'Squalid Liverpool'. The brothels where they lived and plied their trade were also inhabited by thieves and other bad characters well-known to the police. In his opinion, these women were particularly low and degraded, "constantly appearing in the Police Courts as confirmed drunkards, as well as for soliciting and disorderly conduct; and being themselves especially liable to assaults from their drunken and degraded male associates" (Lowndes 1886: 9-22). Thus, local or general Acts of Parliament prohibited solicitation in the public streets, like 5 & 6 Victoria, c. 106, sec. 149, which read: "Every common prostitute or night-walker loitering or being in any thoroughfare or public place for the purpose of prostitution, or solicitation to the annoyance of any inhabitant or passenger, renders herself liable of a penalty not exceeding 40s". These acts also made it a crime for the owners of public houses or lodging houses to allow prostitutes to use their premises for their trade. Lowndes makes allusion in his text to the same Act again, where the following can be read: "If any licenced person is convicted of permitting his premises to be a brothel, he shall be liable to a penalty not exceeding Twenty Pounds, and shall forfeit his licence, and he shall be disqualified for ever from holding any licence for the sale of intoxicating liquors" (35 & 36 Victoria, c. 94, sec. 14) (Lowndes 1886: 31-36).

Another classification of prostitutes can be found in the texts of William Acton who, in contrast with other social investigators and medical men, had a different view on prostitution. Like Lowndes, he was in favour of regulation and lock hospitals to contain and control venereal disease. He was also a member of the Royal College of Surgeons and was Surgeon to the London Lock Hospital for a time. In his two main publications of 1857, The Functions and Disorders of the Reproductive Organs in Youth, in Adult Age, and in Advanced Life and Prostitution Considered in its Moral, Social and Sanitary Aspects, in London and other Large Cities with Proposals for the Mitigation and Prevention of its Attendant Evils, he endorsed the belief of the time in the lack of sexual drive in women and the inevitability of male desire. He saw prostitution as something that could not be avoided in society. Acton saw the prostitute as responsible for the moral and physical contamination associated with promiscuity in the 1870 edition of his Prostitution (Atwood 2011: 25-26). Like Lowndes and other social reformers he thought that poverty was the main cause of prostitution together with certain characteristics of working-class culture. Similarly, Acton also distinguished between upper-class and lower-class prostitutes, but he had a more optimistic view as he considered the activity as something transitory. He believed that these women could return to decent society. In Prostitution Acton questioned the myth of the downward path as he believed that prostitutes, or at least most of them, did not

end up in destitution and death. In his opinion, there were many who ended up getting married, getting jobs, running their own businesses, or resorting to emigration, and thus able to move out of the trade (Acton 1857: 64, 73).

The number of prostitutes in Liverpool was certainly alarming and Lowndes believed that the number in a particular town or city depended on the number of inhabitants and on the existence of a series of circumstances such as the "the presence of soldiers, naval seamen, marines or merchant seamen". Hence Liverpool, being "a very large seaport, with a large floating population" was no exception to this rule (Lowndes 1886: 1-9). Following the Annual Report of the Liverpool Head Constable for 1853, Lowndes shows figures for 1852 and 1853 that reveal an increase in this activity in general terms and an increase of crime associated with the trade. This table demonstrates to what extent the situation was worrying by the middle of the nineteenth century:

	Number of brothels	Number of prostitutes	Houses of accommodation	Lodging houses	Brothels removed by Police
1852	574	1,698			
1853	591	1,896	44	132	65

TABLE 1: Prostitution activity around the middle of the nineteenth century in Liverpool

Source: Frederick W. Lowndes, *Prostitution and Venereal Diseases in Liverpool* (London: J. & A. Churchill; Liverpool: Adam Holden, 1886)

To this, he added the number of prostitutes who had been taken into custody for disorderly conduct in 1853: 1,123 of which 946 had been committed, figures which reflect the association that existed between the trade and delinquency.

Focusing on the birthplace of the women for 1853, Lowndes informs in his *Prostitution and Venereal Diseases in Liverpool* that most of these women were from Liverpool itself, specifically 295 of them. However, there were 208 from other parts of England, 497 from Ireland, 48 from Scotland, 52 from Wales, 15 from the Isle of Man and 8 from foreign countries. These numbers disclose two relevant facts regarding prostitution in Liverpool by the middle of the century: that mobility was an important feature of the business and that the situation of extreme poverty in Ireland was decisive in the significant presence of Irish women in the city. They were characterised as belonging to the lowest and most degraded class of prostitutes and by being in a deplorable condition physically and morally. They were also the ones "resorted to by the numerous negroes always present in Liverpool as ships' cooks, stewards, seamen, and labourers" (Lowndes 1886: 1-9).

Again, these facts are very telling as to the distribution of the various classes of prostitute in Liverpool since it was an important seaport with large numbers of people coming ashore from the British colonies.

In the matter of how to treat venereal disease, the Liverpool Lock Hospital had the same policy as the other lock hospitals of the time. As we have seen earlier, prostitution was seen as the cause of the spread of sexually transmitted diseases through contagion. As a consequence, it had to be contained and this gave rise to a double view of the prostitute, both as victim and agent of sexual immorality (Nead 1988: 120-121). On the one hand, they were the living representation of public vice and were seen as a threat to the moral values that supported the social organization of the State and the Empire; in the same fashion they were associated with the Industrial Revolution and its consequences contaminating the cities and bringing social chaos (Bartley 2000: 10). Nonetheless, there was another definition of the prostitute as a social victim, a hopeless outcast believed to be on a downward path, making her the object of medical research and philanthropy. Thus, Lowndes argues in his *Prostitution and Venereal Diseases in Liverpool* that it is our humanitarian duty to provide charitable relief to men and women suffering diseases the result of their depravity. However, he acknowledges that this represents a pecuniary burden on philanthropists, ratepayers and local parishes (Lowndes 1886: 41-49).

Although Lowndes does not discuss in his text notions of seclusion and indoctrination that formed part of the nation's strategy of containment of deviant elements, these aspects were present in the daily lives of hospital inmates, especially of female patients. In this respect, lock hospitals had rules that constricted patients' behaviour according to middle-class notions of propriety and respectability. These rules were aimed at controlling working-class habits associated with the lower orders of society, subjecting men and women to a moral code; in the case of female patients the model to be followed was their middle-class superiors. In other words, Victorian middle-class gender norms were to be articulated and explained as part of the reform and healing process of what Butler might have called the 'fallen angels' (Butler 1993: 18, 22).

Thus, the Liverpool Lock Hospital remained the only one of its kind in the city where both men and women with venereal disease were admitted freely, except for "foreign sailors from foreign vessels". Patients could enter and discharge themselves from the hospital voluntarily, but in most cases they were persuaded of the need to stay until cured, and, according to Lowndes, the majority did so. He states that the number of patients admitted for 1834 was 414 (218 males and 196 females) and for 1854, that is, thirty years later, 415 (263 males and 152 females) (Lowndes 1886: 41-49). It can be appreciated that there was no big difference in the numbers of lock patients over a time-span of thirty years. However, what these figures

certainly show is the prevalence of venereal diseases throughout the early and mid-Victorian period. The following table shows the numbers that he gives for the years between 1874 and 1885:

Years	Males	Females	Total
1874	312	144	456
1875	295	172	467
1876	336	150	486
1877	326	141	467
1878	391	183	574
1879	319	215	534
1880	333	291	624
1881	362	280	642
1882	352	287	639
1883	321	252	573
1884	405	195	600
1885	294	187	481

TABLE 2: Patients at the Liverpool Lock Hospital 1874-1885

Frederick W. Lowndes, *Prostitution and Venereal Diseases in Liverpool* (London: J. & A. Churchill; Liverpool: Adam Holden, 1886)

As Surgeon to the Liverpool Lock Hospital, Lowndes gives the same numbers for the years 1875-1879 in an article about the prevalence and severity of constitutional syphilis in Liverpool published in the *British Medical Journal* in 1880. In his opinion, the numbers for women had considerably increased between 1879 and 1884, but with fluctuations. Despite this, the number of men was still substantially higher than that of women entering the Lock Hospital. This might be explained by the fact that Liverpool was a seaport and as a result the number of men who resorted to the services of prostitutes was significantly greater in comparison with other places where lock hospitals were found. There is also the fact that women only went to the Hospital when they were in an extremely deteriorated state suffering mainly from constitutional syphilis which prevented them from continuing with their trade. It can be similarly observed that the number of women who sought relief at the Liverpool Lock Hospital decreased after 1884. These women were not only prostitutes (who represented a majority in the wards), but also married women infected by their husbands and young girls victims of indecent

assaults (in smaller numbers in the wards). Both men and women received mercury treatment against syphilis in the Liverpool Lock Hospital. Lowndes also alludes to the popular belief that sexual intercourse with a virgin was a cure for venereal disease, and gives it as an explanation for the atrocities committed against girls of a tender age (Lowndes 1886: 41-49). This superstition had been widespread earlier in the century and still prevailed in the latter decades, as Lowndes's text proves. Likewise, it reveals that Stead's arguments about the sale of virgins and the involvement of their parents in the business were not as far-fetched as many social historians believe (Spongberg 1997: 110-116, 120-123).

In his *Prostitution and Venereal Diseases in Liverpool*, Lowndes also reproduces some of the figures for male and female inmates of the Liverpool Parish Infirmary he had already gathered in his *Medical Journal* article for the years between 1875 and 1879. To these he added figures for 1874 and those for the period between 1880 and 1884. Infirmaries in workhouses usually had lock wards for the destitute with venereal disease and followed the principle of classification that pervaded the period. These special wards contained some of the men and women paupers infected with syphilis who could not obtain admission into the lock hospital (Longmate 2003: 59, 156-157). The following table represents the numbers that Lowndes gives for venereal wards in the Liverpool Workhouse:

Years	Males	Females	Total
1874	182	213	395
1875	128	186	309
1876	149	175	324
1877	100	136	236
1878	98	234	332
1879	106	229	335
1880	165	288	453
1881	289	322	611
1882	273	387	660
1883	267	414	681
1884	337	426	763
1885	348	368	716

Table 3: Patients at the Liverpool Workhouse, 1874-1885

Frederick W. Lowndes, *Prostitution and Venereal Diseases in Liverpool* (London: J. & A. Churchill; Liverpool: Adam Holden, 1886)

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This table shows that the number of women in venereal wards is significantly higher in the Workhouse Infirmary that in the Liverpool Lock Hospital, with peak years and a general consistent increase over the last years of his analysis. These figures might be attributed to the fact that men could return to their former activities when they were released from the Lock Hospital whereas women had no other means of subsistence than prostitution and the streets. Another explanation is that very few women entered the Hospital at an early stage of the disease and consequently, in most cases, could not be cured. Hence, most of them ended up in the parish workhouse where they lived out the rest of their lives (Lowndes 1880: 727).

Lowndes shows himself especially preoccupied about the prevalence of venereal disease in Liverpool in the years around the publication of this text. He believes that the figures for patients in the Lock Hospital and in the lock wards of the Workhouse Infirmary are just a faint indication of the true number of people affected by the disease, the tip of the iceberg. He supports his views with the testimonies of private doctors and specialists who bear witness to the numerous instances of men, women and children suffering from the different symptoms that are characteristic of these sexually transmitted diseases, syphilis in its secondary and tertiary stages being the most dreaded of all. Moreover, he makes reference to quack doctors "whose bills are still to be seen persistently in urinals and on walls with an effrontery to those unused to it" and to their "filthy pamphlets" which were "still distributed in our leading thoroughfares" (Lowndes 1886: 41-49). The demand for private practitioners and quacks testifies to the persistent prejudices against carriers of syphilis and their social rejection at this stage of the Victorian period. Lowndes attributes the state of physical deterioration and neglect of many seamen, labourers, and men from many other professions to a lack of cleanliness; the same happened with lads of all classes who in many cases "suffer most severely in the attempts to conceal the matter from their parents" (Lowndes 1880: 729).

As a proof of the incidence of venereal complaints in the population of Liverpool, Lowndes includes figures for the deaths from syphilis provided by the Medical Officer of Health, Dr. Taylor, and the Assistant Medical Officer, Dr. Hope. Nonetheless, he considers that the true numbers are far more appalling than those given in the following table:

Frederick W. Lowndes, MRCSE and Surgeon to the Liverpool...

Years	Males	Females	Total	Infants under one year
1874	50	42	92	77
1875	42	28	70	60
1876	47	33	80	66
1877	40	31	71	65
1878	33	34	67	61
1879	37	38	75	62
1880	43	46	89	67
1881	32	29	61	40
1882	33	40	73	59
1883	36	44	80	67
1884	34	41	75	57
1885	33	50	83	70

Table 4: Deaths from syphilis in Liverpool, 1874-1885

Frederick W. Lowndes, *Prostitution and Venereal Diseases in Liverpool* (London: J. & A. Churchill; Liverpool: Adam Holden, 1886)

Again, these figures reflect the fact that there were reasons for Victorians to be afraid of the spread of venereal disease, although their prejudices were focused on prostitutes as the living representation of death and corruption, guilty of sexual excess. The numbers of infants under one year of age who died of related complaints similarly reveal the dramatic impact this disease had on this sector of the population. Although we now know that the disease can be transmitted to the baby during the process of childbirth, for most of the Victorian period, people believed that 'congenital syphilis' was a hereditary complaint. Also, as we have seen, many married women were the victims of their husbands' promiscuity, but Lowndes does not show any explicit condemnation of male sexual behaviour.

I believe that many of the ideas in Lowndes's writings reverberate in our contemporary societies. Issues like prostitution and human trafficking for the purposes of sexual exploitation are still painfully present and are the object of concern and debate on a trans-national global level. As Lowndes' text demonstrates, two different discourses around prostitution still prevailed for the later part of the Victorian period: that of the agent and that of the victim in the figure of the fallen woman. Despite some ideological changes and medical discoveries, all the moral debates around the issue emphasised these two sides of the same coin. Here, the task of reforming and curing

prostitutes of venereal disease, both at the same time, may be perceived to constitute a certain contradiction. Understanding aspects such as the causes of prostitution or the classification of women remained the same throughout the 1870s and 1880s, perpetuating traditional views on the matter and merely repeating the beliefs of social researchers and reformers of an earlier period. The inevitability of prostitution and male sexual excess became a more important factor in the moral and medical discourses of social purists so that emphasis on the seclusion and control of deviant elements was seen all the more as necessary to avoid the spread of disease and immoral behaviour. The passing of the three Contagious Diseases Acts in the 1860s and the articles published by Stead in the Pall Mall Gazette together with the implementation of the Criminal Amendment Act in 1885 in effect endorsed previous notions associated with the innocence of victims and the depravity of male seducers thus making the rescue of prostitutes and fallen women the main objective of middleclass reform campaigns. This also affected the work done in lock hospitals and lock infirmaries in workhouses devoted to the treatment and cure of venereal disease in the 'deserving and undeserving poor'. And yet, decent middle-class wives and children infected by promiscuous husbands and fathers were also part of the philanthropic project of institutions like the Liverpool Lock Hospital and of medical reformers like Frederick Lowndes in the later decades of the nineteenth century.

By way of conclusion, Lowndes sadly states that the number of prostitutes and brothels had not diminished in those thirty years or so, the object of his analysis; on the contrary, the numbers had increased in Liverpool in the final decades of the Victorian period. In his opinion, there was no way of stopping prostitution and solicitation or disorderly conduct with the legislation in force at the time. We must remember that the CD Acts were not still in operation when he wrote his Prostitution and Venereal Diseases in Liverpool. Despite the increasing presence of the malady in the later years of the nineteenth century, many lock hospitals and lock wards in general hospitals were closed by the end of the Victorian era, including the Liverpool Lock Hospital, which disappeared in 1899 after Lowndes had been appointed consulting Surgeon and the reception of inpatients had ceased. And this happened despite the need for specialised treatment and the outstanding incidence of syphilis among the population. This is what the article "Reminiscences of the Liverpool Lock Hospital" published in The Lancet in 1907 tries to prove. By reading between the lines one can catch the new attitude to venereal disease, the result of the Social Purity Movement's ideas and the most recent legislation concerning prostitution. One conclusion of this would be that "to provide for the treatment of venereal cases is to encourage vice" (306). Men now also had to repress their sexual drives, something that Lowndes tries to accept in his conclusion. However, it was not possible to avoid immorality in women who wished to follow so-called evil courses without giving powers to the police who would then need the support of magistrates and the rest of society.

Lowndes seems to be in favour of regulation extended to the whole civil population and throughout the country, but he finishes with a question which shows how influential public opinion can be in these matters: "Are the public prepared to see a law passed which shall make it penal for any woman to lead an immoral life?" (Lowndes 1886: 49-56). According to him, these matters deserve serious consideration, but it is still Foucault's and Butler's ideas that determine the analysis one can make of 'deviant elements' at the end of the Victorian period as far as notions of gender and discipline are concerned.

Notes

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- ². For a further development of the issue of the Contagious Diseases Acts and their application, see Howell (2009: 28-75).
- ³. For a further development of the issue of Stead's campaign and the passing

of the 1885 Criminal Law Amendment Act, see Romero Ruiz (2011: 27-54).

4. Voluntary hospitals were hospitals run by voluntary subscriptions and therefore depended on the contributions of middle-class philanthropists who devoted their time and energy to the restoration of the health and moral reform of venereally diseased people. For more information about the running and functioning of lock hospitals, see Romero Ruiz (2014).

Works Cited

ACTON, William. 1857. Prostitution Considered in its Moral, Social and Sanitary Aspects, in London and other Large Cities with Proposals for the Mitigation and Prevention of its Attendant Evils. London: John Churchill, New Burlington Street.

ATWOOD, Nina. 2011. The Prostitute's Body: Rewriting Prostitution in Victorian Britain. London: Pickering and Chatto.

BARTLEY, Paula. 2000. *Prostitution: Prevention and Reform in England, 1860-1914.* London and New York: Routledge.

Boyd, Nancy. 1982. Josephine Butler, Octavia Hill, Florence Nightingale: Three Victorian Women Who Changed the World. London: The Macmillan Press.

BUTLER, A.S.G. 1954. *Portrait of Josephine Butler*. London: Faber and Faber.

BUTLER, Judith. 1993. Bodies that Matter: On the Discursive Limits of 'Sex'. London: Routledge.

Criminal Law Amendment Act, 1885 (An Abstract). The Women's Library, London Metropolitan University, 3/AMS/B/01/01-04, Box 36.

FOUCAULT, Michel. 1979. *Discipline and Punish: The Birth of a Prison*. Trans. A. Sheridan. London: Penguin Books.

FOUCAULT, Michel. 1990. The History of Sexuality: Volume I, An Introduction. Trans. Robert Hurley. London: Penguin.

HALL, Lesley A. (2000) 2013. Sex, Gender, and Social Change in Britain Since 1880. London: Palgrave Macmillan.

Harrison, Fraser. 1977. The Dark Angel: Aspects of Victorian Sexuality. London: Sheldon Press.

HOWELL, Philip. 2009. Geographies of Regulation: Policing Prostitution in Nineteenth Century Britain and the Empire. Cambridge: Cambridge U.P.

LONGMATE, Norman. 2003. The Workhouse: A Social History. Pimlico: London.

LOWNDES, Frederick W. 1876. The Extension of the Contagious Diseases Acts to Liverpool and Other Seaports Practically Considered. London: J. & A. Churchill, New Burlington Street.

LOWNDES, Frederick W. 1876. Prostitution and Syphilis in Liverpool and the Working of the Contagious Diseases Acts, at Aldershot, Chatham, Plymouth, and Devonport. London: J. & A. Churchill, New Burlington Street.

LOWNDES, Frederick W. 1880. "The Liverpool Lock Hospital and the Prevalence and Severity of Constitutional Syphilis in Liverpool". The British Medical Journal 727 (May 15).

LOWNDES, Frederick W. 1882. Lock Hospitals and Lock Wards in General Hospitals. London: J. & A. Churchill and Liverpool: Adam Holden.

LOWNDES, Frederick W. 1886. Prostitution and Venereal Diseases in Liverpool. J & A. Churchill: London and Liverpool: Adam Holden.

Маноор, Linda. 1990. The Magdalenes: Prostitution in the Nineteenth Century. London & New York: Routledge.

MITCHELL, Sally. 1981. The Fallen Angel: Chastity, Class and Women's Reading 18351880. Bowling Green, Ohio: Bowling Green University Popular Press.

MOBERLY BELL, E. 1962. *Josephine Butler: Flame of Fire*. London: Constable and Co. Ltd.

MORT, Frank. (1987) 2000. *Dangerous Sexualities: Medico-Moral Politics in England Since 1830*. Routledge: London and New York.

NEAD, Lynda. 1988. Myths of Sexuality: Representations of Women in Victorian Britain. London: Blackwell.

Perkin, Joan. 1994. Victorian Women. Cambridge: Cambridge U.P.

Purvis, June. 1991. A History of Women's Education in England. Buckingham: Open U.P.

"Reminiscences of the Liverpool Lock Hospital". 1907. *The Lancet*. (February 2).

ROMERO RUIZ, Maria Isabel. 2011. "Women's Identity and Migration: Stead's Articles in the Pall Mall Gazette on Prostitution and White Slavery". In Castro Borrego, Silvia Pilar and Maria Isabel Romero Ruiz (eds.) Cultural Migrations and Gendered Subjects: Colonial and Postcolonial Representations of the Female Body. Newcastle-upon-Tyne: Cambridge Scholars Publishing: 27-54.

ROMERO Ruiz, Maria Isabel. 2014. The London Lock Hospital in the Nineteenth Century: Gender, Sexuality and Social Reform. Oxford: Peter Lang.

Spongberg, Mary. 1997. Feminising Venereal Disease: The Body of the Prostitute in Nineteenth Century Medical Discourse. London: Macmillan.

STEAD, W.T. 1885. "The MaidenTribute of Modern Babylon". *The Pall Mall Gazette* 6336 (XLII). July 6. The Women's Library, London Metropolitan University, 3/AMS/B/01/01-04, Box 36.

WALKOWITZ, Judith R. 1991. Prostitution and Victorian Society: Women, Class and the State. Cambridge: Cambridge U.P.

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