Effects of the social

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Effects of ‘the social’:  
*On ‘the social’ and the logics of its stratification in epidemiological writings 1850s–1960s*

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**Abstract:**
This study explores a fundamental concept in social epidemiology: ‘the social’, through analysing epidemiological research articles and sociological textbooks from 1858 to the 1960s. The aim of the article is to investigate what role the concept of ‘the social’ played in the structuring of epidemiological production of knowledge from the mid-19th century to the 1960s.

Focus is on examining how the constructions of social taxonomies, i.e., systems of social categorisation and stratification, are subject to certain types of historically contingent logics and certain ideas of the character of human society and how these logics and ideas influenced the production of epidemiological knowledge.

**Key words:** ‘The social’, social epidemiology, social stratification, conceptual history, public health.

**Introduction**

‘Whether explicitly articulated or not, epidemiologic research embodies particular ways of seeing as well as knowing the world (…)’ (Krieger 1994: 888)

In recent years much has been written within public health research about the potential advantages and disadvantages of using social categories and social stratification models for research into the area (see, e.g., Galobardes et al., 2006). The focus has largely been on what the social categories and stratification models represent and on the degree to which they direct epidemiological research. It has been forcefully argued that for socioeconomic position and health ‘What you observe depends on how you measure it’ (Macintyre, et al. 2003). This link between research results, scientific data collection and the ever-present categorisation and stratification has thus received considerable warranted attention. Nevertheless, while it is eminently plausible that ‘what you observe depends on how you measure it’, the argument raises the question: On what does ‘how you measure it’ depend? This is a leading question in this paper.

A guiding hypothesis is that while the choice and construction of social categories used in social epidemiological measurements certainly affect the research results, the social categories themselves merely represent an attempt to create order by abstractions imposed on a disorderly social reality. The social categories represent operationalisations of the more intangible concept of ‘the social’ and as such they represent certain ways of seeing and knowing the social reality.

Considering the systems of classification and stratification used in both historical and contemporary population sciences are based on certain underlying theories (D. Porter 1999: 78/Levitas et al., 1996/Crompton 1998), not least concerning ‘the social’, there are surprisingly few studies that take this concept as a relevant starting point for further analysis. In this paper social categories are understood as the categorisation of what certain groups at a given time perceive as the structure of ‘the social’.
Following this line of thought, I wish to investigate what different concepts of ‘the social’ and logics of social stratification signified in the production of Danish social epidemiological knowledge from the mid-19th century to the 1960s.

Those who ponder such issues do not concern themselves with only the immediate relation between categories, data collection and research results; they consider more fundamental issues, such as the production of epidemiological knowledge and its historical embeddedness. As the German historian of medicine Ludwik Fleck wrote:

‘(...) whether we like it or not, we can never sever our links with the past, complete with all its errors. It survives in accepted concepts, in the presentations of problems, in the syllabus of formal education, in everyday life, as well as in language and institutions. Concepts are not spontaneously created but are determined by their “ancestors”.’ (Fleck 1935/1979: 20)

The fruitfulness of this historical and conceptual study springs from illuminating some of the more fundamental aspects of the production of epidemiological knowledge, enabling us to be even more reflective regarding current research. As the British historian James Vernon noted in his recent book on hunger (Vernon 2007), the study of changing meanings of such central concepts as ‘hunger’ (and, I would argue, ‘the social’) is crucial because the concepts and their applied meanings influence the theories, methods, institutions and the ways of thinking that are used to address these areas.

But how can we then understand the conceptualisations of ‘the social’ as an object of analysis? How can we theoretically and methodologically approach this area of research? In the following section I consider these initial theoretical questions.

Approaching ‘the social’

‘The masters’ right of giving names goes so far that it is permissible to look upon language itself as the expression of the power of the masters: they say “this is that, and that”, they seal finally every object and every event with a sound, and thereby at the same time take possession of it.’ (Nietzsche 1913/2003: 11)

In the social sciences the relationship between language and power that is expressed by Nietzsche has received much attention after ‘the linguistic turn’. It is relevant here because it highlights two basic assumptions in this study: 1) that some individuals or groups of individuals entertain privileged positions from which they can ‘give names’ or conceptualise aspects of reality and 2) individuals do, in a sense, take possession of that which is being named because the process of conceptualising (from a privileged position) entails the creation of certain (specific) spaces of action and horizons of expectation. However, once conceptualised, it often seems that the bond established between a phenomenon and its conceptualisation contains a definitive ‘naturalness’.

In working with ‘the social’ and the ways in which it has been conceptualised, especially in the form of social categories, the ‘apparent givenness of experience’ (Rose 1999) is as crucial as it is difficult to penetrate, for the social categories represent a deliberate scientific attempt to direct our experience of the social.2 The categories are as cornerstones in the construction of the givenness or naturalness of the experience of ‘the social’. The historical and conceptual approach is, however, a very efficient way of destabilising that which seems to be without history.
This study focuses on the use of the concept of ‘the social’ in public health research into social inequality in health from around 1858 to 1960. The empirical basis is research texts on social inequality in health; these texts have been central to epidemiological research since the beginning of the 19th century and are texts in which the concept of ‘the social’ is important. Based on the notion that sociology, in particular, has adopted the task of conceptualising ‘the social’ in its many forms, I included Danish sociological textbooks from 1877 to 1960 in the material examined.

My aim was to investigate larger conceptual transformations over a substantial period. I was not interested in the relationship between ‘the book and the author’. What I found interesting was how the texts contribute to a broader web that structure certain ways of conceptualising ‘the social’, something resembling the Foucauldian notion of discursive formations. This entails understanding the individual text as ‘a node within a network’ (Foucault 1969/2006: 25). It is not a departure from the individual texts, but it is a reconfiguration (or partial deconstruction) of a more traditional perception of the boundaries of texts. The creation of a topical text corpus and the subsequent digitalisation of this corpus enable me to treat the texts as a singular mass or a web that can then be subdivided according to different criteria. The main criterion was to focus on the Danish concept ‘social’—where this was used explicitly and to investigate what statements and concepts it related to in different periods. With this approach, I identified statements about ‘the social’ only in so far as they contain the word ‘social’.

Although this study was inspired by Foucauldian notions of discourse and discursive formations, I found it methodologically fruitful to combine this perspective with that of Begriffsgeschichte (history of concepts), as was advanced by the German historian Reinhart Koselleck (Koselleck 2004). Those familiar with Foucauldian studies will thus find this paper characterised by a more immanent reading of texts, i.e., more preoccupied with the actual use of a singular concept (‘the social’ as it appears in the material described above) and the conceptual architecture surrounding it. This emphasis on the concept follows the theoretical idea of Koselleck that ‘(...) the concepts lending the source-language its shape serve as a heuristic entry into a comprehension of past reality.’ (Koselleck 2004a: 255).

To attempt to understand the underlying logic of the conceptualisations of ‘the social’ as they appear in the epidemiological research texts, the analysis was broadened in two ways. Firstly, it includes the analysis of sociological texts and textbooks to the extent that these texts are linked to the epidemiological texts either directly through references or other forms of detectable linkage. This is thus an exercise in contextualising and furthering the semantic analysis by representing fragments of the social imagination as expressed in different periods. Secondly, the analysis includes the tables and schemas used within the epidemiological texts to portray stratifications of ‘the social’. These may not be designated with the word ‘social’, but they are embedded in the understanding of it.

Several different ideas of the character of ‘the social’ are present, both at different periods of the history of epidemiological production of knowledge and, as mentioned, concurrently. These currents, which are detectable in the text corpus—some dominant, others not—could be termed ideologies inasmuch as they represent more or less coherent ‘world views’ that contain different constellations of the laws of ‘the social’, i.e., logics of causality depending not least on histories of origin. Below is an illustration tentatively placing the different ideological currents in the production of Danish social epidemiological knowledge.

Fig. 1: Approximate chronological placement of ideological currents in the text corpus.
‘The social’ in Danish epidemiological writing

‘The social’ in the form of social categories appeared historically as an appendix to the well-established Hippocratic categories air, water and place. In the tradition of 19th century social epidemiological research, the role of ‘the social’ has been operationalised into a great variety of social categories.

In the Danish context the use of the concept ‘social’ can be found in some of the first epidemiological studies from the mid-19th century. The first use of social categories within health research was in 1850 when the Danish doctor N. E. Ravn published an article on the ‘Relationship between Menstruation, Age and Social Class’ (Ravn 1850). In 1858 the first study of social differences in health (infant mortality) appeared (Bentsen 1858).

The understanding of ‘the social’ was never fully articulated in the Danish research texts. The term ‘social’ from its introduction in the mid-19th century seemingly had at least three general uses.

Firstly, it was used to signify society as such, speaking about ‘the Danish population as a social whole’ (Sørensen 1884). Here the concept takes on the form also noted by Raymond Williams as the ‘merely descriptive term for society’ (Williams 1988: 286) and is connected to concepts of nationhood.

Secondly, it was used to signify a phenomenon constituting a great variety of ‘conditions’ and ‘circumstances’. These conditions and circumstances could be of many different kinds:

‘When one wants to gather statistical data in order to understand the social conditions, one can seek information about how the population lives. One can examine the distribution of wealth and income. One can examine consumption and look at the occupations of the population, its housing conditions, its marriages, its fertility – all of this can in part be viewed in general, in part as elements within each class of society.’ (Westergaard & Rubin 1886: 11)

As is evident from the quote from Harald Westergaard and Marcus Rubin’s study of mortality rates in Fyn’s diocese, the late 19th century concept of social conditions could include several different elements. The elements constituting the social conditions of a population stemmed from both the public and private spheres of life.
Not only were there numerous aspects included in the concept of social conditions, the elements themselves could also be viewed in different ways: as existing within the population as a whole or as connected to specific classes or individuals in the population. Although continuously overlapping, the concept of social conditions can be read analytically as consisting of at least two subsets or types of condition. One subset consists of social conditions as material conditions, and the other as mental conditions. Furthermore, ‘the social’ affected the mind of the individual, but the state of the individual mind also affected (created) social condition. Social conditions could thus include ‘degrees of carelessness’ as when Dr. Bentsen proclaimed that ‘poverty and high fertility rates have the most intimate connections to certain social conditions to which a high degree of carelessness in regard to [entering] marriages plays a great role.’ (Bentsen 1861: 296).

In conceptualising ‘the social’ as material conditions, emphasis was put on housing, food and economy. In the studies the material conditions were primarily conceptualised in relation to classes of the population. The material condition of the proletariat was thus identified as one of the potential causes of the high infant mortality rates (Bentsen 1858).

The third and final general use of the concept of ‘the social’ was in the sense of a structure of (social) positions (Bentsen 1861/Sørensen 1890), that is, as a social taxonomy. It is by far the most common usage of the term, and in the following sections I elaborate this general use of ‘the social’ as a social taxonomy.

Social taxonomies

Throughout history, perceptions of differences and similarities between individuals within given societies have generated a great variety of theories about the constitution or nature of ‘the social’ and its supposed order. The idea of positions within ‘the social’ (social position) is thus old. It entails an idea of a social taxonomy, i.e., a certain idea of a social order mapping out a structure in which individuals are placed.

Social taxonomies in the sense of systems of social categorisation are known throughout history. From the Roman tax classes to the present day socioeconomic status groups, there are many different types of social taxonomies, based on different organising principles and constructed for many different purposes. From the onset of the Danish social epidemiological production of knowledge in the mid-19th century, references can be found to ‘the better or worse social position’ (Bentsen 1861: 324) and to how these positions relate to different aspects of health and illness.

With regard to the methodology and epistemology in modern scientific stratification of ‘the social’, much can be learnt by studying the tradition of the late 18th century naturalists, represented not least by Carl von Linné (1707-1778), and their efforts to expose the order of nature. With the endeavours of these naturalists the creation of taxonomies was crystallised into a scientific method, in the sense that the underlying principles and explicit aims of creating taxonomies were articulated and operationalised. This makes them a good starting point for the investigation of some of the basic logics in the academic practice of construing social taxonomies.

The aspects of particular interest for the understanding of some of the basic logics of later social taxonomic thinking can be summarised in three features 1) the representation of order, 2) the choice of defining characteristics and 3) the fusion with the ideas of evolution. In the following section, I briefly explore these three features and their implications for the later epidemiological production of knowledge on ‘the social’.

Aspects of scientific taxonomic thinking
The aim of using taxonomies for the 18th century naturalist was to map out and represent an underlying order of nature. For early scientists, such as Carl von Linné and his contemporaries, the process of creating a taxonomy went from observation of certain characteristics to the creation of categories into which things containing these characteristics could be placed and later grouped (in ‘species’, ‘family’, ‘class’ etc.), finally creating the linguistic system of categorisation. The process of singling out certain features of things, i.e., finding the defining characteristics, was a matter of choice—including particular traits and excluding others (Desrosières 1998). In this sense scientific taxonomic thinking has constituted, from the start, an experiential grid through which certain spaces of experience are opened while others are blocked (Foucault 1966/2002/Desrosières 1998). By filtering the observations of reality through this experiential grid, scientists were left with the features that made things ‘what they really were’ and with a clear view of the structural relations between the categorised entities.

This kind of thinking also made its way into medicine. Diseases were to be classified, arranged in species, genus, families etc. In the book ‘Nosologia methodical’ from 1768 Boissier de Sauvages thus identified no fewer than 2400 species, 295 genera and 10 classes of diseases (Porter 1999).

Among those who constructed taxonomies, there has been a tendency to stress not the arbitrary nature of the chosen characteristics but instead their self-assertive nature. When the characteristics were to reveal the sovereign order of nature as Linné put it (quoted in Foucault 1966/2002: 173-174), they could hardly be arbitrary but had to be seen as determined by or manifesting that same order.

In the 19th century epidemiological use of social taxonomies there was a greater awareness of the fact that many characteristics could be chosen to form the basis of a (social) taxonomy. In the late 19th century one of the few practitioners in Danish epidemiology, H. Westergaard, thus stated that: ‘One can imagine a multitude of ways in which the population can be divided and where one reveals the social differences [in the population], one can be sure that the mortality rates differ.’ (Westergaard 1881:16, my underlining). The core idea: that a certain order or structure could be extracted and thus revealed by the scientific categorisation remained essential to the use of social taxonomies and epidemiological production of knowledge. In Westergaard’s formulation there is a clear notion that the epidemiologist, using the complex set of classification and quantification, can access and represent the structure of ‘the social’, i.e., reveal those effective contours of ‘the social’ that influence the health of the population. Consequently, although the taxonomies could be constructed from various sets of characteristics, the understanding was that they all depicted aspects of ‘the social’, to a greater or lesser extent.

In the mid-20th century the influential German-Danish sociologist Theodor Geiger while discussing the concept of class in the social statistics stated that:

‘The concept of class as used in the social statistics is quite colourless. It aims to divide a population according to certain given exterior characteristics of the individual such as sex, age, occupation, income, wealth, residence, family circumstances etc. just as one classifies animals, plants or any other thing according to certain points of view that under observation are self-assertive.’ (Geiger 1948:17)

In relation to the obvious notion that the classification of ‘the social’ is no different from the practices of classifying the objects of nature, Geiger’s formulations carry an interesting resemblance to the taxonomic logic used by the 19th century naturalist. The resemblance stems from the conjunction of the logic of ‘discovering distinctions’ and the idea of the self-assertive nature of these distinctions, allowing the observer to designate them by their proper names.
A fusion between the logic of taxonomies and evolutionary thought occurred during the 19th century (Desrosières 1998), which had two significant consequences. Firstly, a theory on the origin of (and not just the relation between) the species had been formulated and became widespread along with Darwin’s theory in the 1850s. Furthermore, the taxonomies as systems of differences and similarities became stratified by evolutionary thought. The taxonomies could henceforth be structured by degrees of development both diachronically within each species and also synchronically, stratifying all beings according to their degree of development, whereby the now familiar picture of the evolutionary tree with the amoeba at the bottom and the human being at the top was created.

As illustrated in the following section, these ideas of evolution and stratification were important to the construction and function of the mid-19th century social taxonomies as these were used in the production of epidemiological knowledge.

Evolutionism and the culture of ‘the social’

‘Culture is passions baptised’ explained Marcus Rubin in 1896 in one of his articles on how mortality rates could be seen as a measure of the level of culture obtained within a population. Even though the concept of culture played a significant role in 19th century epidemiology, Rubin’s statement is as close as one gets to a specific definition of the concept.

The concept of culture and cultural evolution was launched alongside the organic perception of society, which in the mid- and late 19th century played a significant role in broader Western (D. Porter 1999), and particular Danish, social scientific discourse (Møller 2002). The idea of cultural evolution was closely connected with the idea of biological and social evolution and (hence) stratification. It went along with the biological analogy in the social sciences in that the progress of human society and human kind was characterised by increasing differentiation, which was known in biology as the movement from the one-celled amoeba to the human being, in the social (Darwinist) sciences as the movement from primitive society (the horde, tribe etc.) to modern society and, finally, in the cultural studies as the movement from savage through barbarism to civilisation (Voget 1960). The ideas of biological, social and cultural evolution were united in the writings of, among others, Herbert Spencer, who forcefully argued that the mechanisms of social evolution were indeed the same as those of biological evolution, and that social evolution was intimately connected with the civilising process (D. Porter 1999: 168). However, the underlying theory of ‘the social’ as something created by a process of social and cultural evolution penetrated the epidemiological understanding of the nature of ‘the social’. The research text of this early stage of epidemiological research incorporated this cultural evolutionary hierarchy in the social taxonomies, i.e., the system of social categorisation. While investigating the differences in infant mortality rates within the peasantry Dr. Bentsen in 1861 wrote that:

‘[I] have chosen a classification that distinguish between both the greater and lesser wealth and between the more or less distinct cultural level and concept of morality. I believe that one will admit that the schema below in that regard gives a progressive scale:

1) Children of tenants, labourers and unmarried mothers
2) -:: house owners (without farmland) and skilled workers
3) -:: small-holders including house owners (with farmland)
4) -:: farmers
5) -:: officials, proprietors and other property owners outside the peasantry.’ (Bentsen 1861: 325).
The evolutionary theory of the nature of society thus led to a social taxonomy based on an experiential grid that isolated a mixture of moral and work-related characteristics, arranged according to a progressive evolutionary scale.

In the study cited earlier, Rubin explores the subject of infant mortality in different social groups. Rubin classifies the population in three social groups: ‘the working population’ (Den arbejdende befolkning), ‘the officials’ (bestillingsmænd) and ‘the affluent’ (velstillede) (Rubin 1896: 549) and adds an interesting observation:

‘But these three social groups (...) are also three cultural groups. The lowest cultural stage is characterised by walking blindfolded, which in this case means to produce a large number of children who also die in large numbers. This was how it was in the past and still is in the orient (...). The next cultural stage is to see the danger and get out of harm’s way (...). The highest cultural level is to see the danger and overcome it (...) to make oneself master of the situation.’ (Rubin 1896: 549–550)

In the equalisation of social groups with cultural groups and through the infusion of cultural evolutionary stratification into the social categorisation, what emerges is a social taxonomy that contains a specific temporality and hierarchy.

This connection between social and cultural stratification influenced the production of epidemiological knowledge in several ways, not least the process of identifying relevant objects of intervention (Christensen 2009) and in the specific construction of causality within the studies. In the beginning of the 20th century Dr. Ørum published a study of the relationship between infant mortality and social class (or more directly translated ‘layers of society’). Commenting on a chart showing the distribution of cases of malnutrition and brain, congenital and internal diseases within eight social classes, he states that:

‘We especially notice the role played by culture in relation to the congenital diseases [in specific social groups] (...) office workers and businessmen together with the working classes are equally positioned (...) in relation to malnutrition, but here the movement goes from the cultivated groups and in the opposite direction. In regard to brain diseases, culture seems to play a role in infancy (...)’ (Ørum 1914: 68)

Through the equalisation of social and cultural groups and the immanent evolutionary hierarchy, culture came to play an independent role in itself as a causal agent.

The power of ‘the social’
In her book ‘The savage within – a social history of British anthropology 1885–1945’ (1991) Henrika Kuklick argues that in between the ideas of evolutionism of the 19th century and the ideas of functionalism of the early 20th century emerged a distinctive set of diffusionistic ideas (Kuklick 1991: 119). The diffusionists, much like the evolutionists, saw a primary cause of social pathologies in the irrational behaviour of the lower strata of society. The evolutionists had isolated the moral character and behaviour of ‘the lower classes’ as the (only) relevant objects of intervention (Christensen 2009). The diffusionists, however, held that the cultural variations seen in the population were not the result of a grand scheme of cultural evolution but were, in fact, a function of the social organisation of society. The diffusionists thus incorporated some of the ideas of the newly emerged functionalism. One of the main arguments was that different aspects of the ‘human potential’ were drawn out by different types of social organisation (Kuklick 1991: 125). The behaviour of the ‘lower strata’ was accordingly seen as an involuntary reaction to the social situation, and as Kuklick argues ‘The logical implication of this [diffusionistic] argument was that the cure for social pathology was social structural reform.’ (Kuklick 1991: 125).

Although the Danish epidemiologists did not contemplate issues such as the origins of culture (whether it was created by evolution or by diffusion), the production of epidemiological knowledge from the late 19th century to the early 20th century has much in common with diffusionistic ideas. Firstly, the production of epidemiological knowledge broke with the cultural evolutionism of the earlier studies. Secondly, social structural reform was precisely what the Danish epidemiologists aimed for in this period (Løkke 1995/ Christensen 2009). Behind the wish for structural changes was a new gaze upon the epidemiological research results earlier read as merely the consequences of socio-cultural evolution and stratification. Writing about differences in mortality rates in 1876 Dr. Ulrik could thus argue that:

‘No yield of the hygienic statistics seems more rewarding with regard to a clear insight into the social conditions of our time than the information it provides on the mortality rates in different strata of society – it reads like an accusation, which cannot remain unheeded.’ (Ulrik, 1876: 67).

Furthermore, the production of knowledge incorporated certain functionalist ideas of social determinism, arguing that the organisation of society as such was a source of social problems and health problems. In only a few places was this articulated as clearly as in the opening pages of Westeraard and Rubin’s study of mortality rates from 1886:

‘It is admitted – either directly or indirectly – that the organisation of society brings about such unfairness that the whole of society as such must try to remedy this for those who suffer from this unfairness, and the support that the state will offer thus becomes the fulfilment of a duty(...) ’ (Westergaard & Rubin 1886: 10)
Theories stating that social phenomena, for example social patterns in mortality rates and actions such as suicide (Durkheim 1897/1979), could be the result of the organisation of society thus became important elements in the production of epidemiological knowledge. The social taxonomies in the epidemiological research of the late 19th century resemble those of the mid-19th century classifying the population according to primarily occupation, which was then assembled into larger ‘social classes’ or ‘social strata’. However, the logic of the stratification of ‘the social’, i.e., the organising principle of the social taxonomy, was undergoing a significant change. More simply, ‘power’ and ‘conflict’ had entered the idea of ‘the social’ and to a certain extent had replaced the more harmonious ideas of cultural evolutionism and (natural) social differentiation. The primary consequence of this change in the experiential grid was that new objects of interventions emerged. When the organisation of society itself could be ‘a causal agent’, social structures too could become objects of intervention. 

Nevertheless, the epidemiologists of the late 19th and early 20th century would still resist the more radical social determinist claims that threatened the idea of free will (Sørensen 1887) and some of the ideas of social laws, such as the law of large numbers (Westergaard 1881). To some extent they would also dismiss the novel radical socialist claims that the capitalist organisation of society as such was to blame for the social and health-related problems. In the epidemiological production of knowledge, Marxist ideas of the structure of ‘the social’ were circulated, discussed and commented upon very critically.

Capitalism and liberalism received critical attention in the research literature of the late 19th century. Some, for example the leading medical figure Dr. Sørensen, argued that the state must take on a more active role and limit the negative consequences of the capitalist system and ‘laissez faire liberalism’ (Sørensen 1889). However, this line of thought should be distinguished from the more radical Marxist ideology that in the interwar years influenced the production of epidemiological knowledge.

The Marxist thinkers of the late 19th and early 20th century made power relations and antagonisms their pivotal point in relation to the organisation of society. Unlike the Durkheimian functionalist idea of the social order and the organisation of the social with its focus on consensus (to which I return below), the Marxist idea of social structure highlighted an antagonistic and power-orientated nature of the organisation of society (Manicas 1980).

In post-1917 Russia the ideas of social determinants of health made a significant impact under the new socialist rule. Physicians, termed ‘the necessary bourgeoisie’, were to be specially trained in the art of discovering the social origin of diseases (D. Porter 1999). Elsewhere in Europe similar trends were occurring. Under names such as Preventive Medicine, Social Hygiene and Social Medicine, the ideas of the health-related impact of ‘the social’ were gaining more attention (Sand 1952). This was also the case in Denmark where the desirability of an independent subject in Social Medicine was voiced in the 1920s, and in 1927 the ‘Monthly journal for the practitioners of medicine and social medicine’ appeared.

Only few advocated a Marxist interpretation of the relationship between the organisation of society and public health as rigorously as did the Danish group called ‘Socialistic Practitioners’ (Socialistisk Medicinergruppe). Under the influence of this ideological turn, social determinism was seen as primarily an economic determinism. During the financial crisis of the 1930s the Socialistic Practitioners claimed that an intimate connection existed between the economic and political structure of society and the population’s level of health:
‘(...) it is proven how another characteristic of this system is that [capitalism] with still shorter intervals is subject to economic crisis, which (...) will be accompanied by similar fluctuations in the general state of the health of the population.’ (Socialistisk Medicinergruppe 1934: 19)

In their descriptions of this intimate relationship they embraced a classification of the population in the two well-known classes: the proletariat and the bourgeoisie, according to the ownership of the means of production. In accordance with the basic logic of the Marxist theory of social stratification, the chain of causality in the epidemiological production of knowledge went from ownership of capital goods to income distribution to nutrition and housing and finally to the health conditions of the individual (Socialistisk Medicinergruppe 1934: 19–25).

Although of lesser importance in the overall production of epidemiological knowledge in the early 20th century, the Marxist-inspired social stratification is interesting as it represents a fundamentally different ideological background for the construction of social taxonomies.¹⁶ In other words, the experiential grid through which social reality is filtered and broken down into social categories opened up for a social structural view on the origin of ‘the social’. Cultural evolution or the individual and the individual’s moral or social behaviour had almost no significance in relation to this particular logic of stratification.

In contrast to the epidemiologists of the late 19th century, who included some aspects of power and conflict in the logic of social stratification, the Marxist logic of stratification was based upon an explicit focus on ownership, power relation and the inherent antagonistic relationship, so pronounced in the era of capitalism, between those who owned the means of production and those who did not. By applying this experiential grid on ‘the social’ in the production of epidemiological knowledge, the objects of intervention changed significantly. It was the capitalist system itself that was the real cause of the social epidemiological problems as well as the social and political troubles of the early 20th century, even those posed by the rising Nazi regime. As the Socialistic Practitioners explained:

‘A starved and weakened population was the health-related manifestation of capitalism’s general dissolution at the time of the Nazi takeover [in Germany]. Nazism’s dissociation from social relief systems, its racial persecution, the intimidation of doctors, the curbing of the sciences and the legalisation of quackery are the health-related manifestation of capitalism in its final desperate and barbaric attempt to ensure the basis of its existence: the unearned income [profit]’ (Socialistisk Medicinergruppe 1934: 44)

With ‘epidemiological’ conclusions such as these, the health behaviour of the individual was of relatively little importance as an object of intervention. The social environment, understood in a very broad sense of the term, including the political economic system, was brought to the foreground as a fundamental causal agent.

Within the Danish medical community there were, however, also representatives of the other end of the political spectrum. The bio-social or Social Darwinist taxonomical thinking that was to give a pseudo-scientific legitimacy to the Nazi atrocities of the Second World War, thus also found a voice in Danish public health.

Excursus: The biology of ‘the social’ 1910s–1940s

In 1943 the Danish chief physician Hindenborg wrote a pamphlet on ‘The Public Health and Denmark’in which he made a strong plead for less mixing of the races in Denmark:
‘Through the years after the world war and until 1940 there has been a significant immigration of foreign races, which has led to a significant mixing of races (...). While it must seem obvious that foreign immigrants are not Danish and cannot think or feel nationally, it is obvious the cross breed often seems spiritually discordant. That certain bodily anomalies appear with cross breeding between different races and that these disproportions (...) are greater where the racial difference is greater, is by now beyond doubt. Children of parents who are racially far apart will most likely have an imbalanced character and soul and lack a healthy social feeling and social attitude.’ (Hindenborg 1943: 7)

Hindenborg was a declared National Socialist, which is evident from his statements on race and health. Nonetheless, what I would like to draw out here is the subtle causal link established between a determining biological foundation and the resulting ‘character’, ‘social feeling’ and ‘social attitude’ of the individual. In other words, this is an example of social characteristics being interpreted as the manifestation of biological traits. Hindenborg’s research represents only one, albeit extreme, manifestation of a more general biological ideology that influenced the social scientific and public health discourse on ‘the social’ in the first half of the 20th century.

Hindenborg’s statement reflects the increased interest in genetics in the early 20th century. The idea of genes as agents in relation to disease causation was beginning to form what was later termed ‘the genetic paradigm’ in medicine (Alfons 2002). Furthermore, in his endeavours Hindenborg could have drawn on inspiration from several Danish sociologists from the late 19th and early 20th century. The scientific taxonomies of humankind as a species, the nature and stratification of ‘human races’ had received considerable attention within the Danish social scientific discourse of late 19th century (Møller 2002). In one of the first Danish sociological texts from 1880, Professor Claudius Wilkens, who was strongly inspired by Herbert Spencer (Hansson et. al.1996), made remarks on what he perceived as the differential development of different races, stating:

‘It is plausible that the difference in many cases has its origin in the differential pace of development of the different races: If within the same period of time one race develops after geometric 1, 2, 4, 8, 16 and another after arithmetic 1, 2, 3, 4, 5 then the first will get an incredible head start, whereas the latter seems stationary.’ (Wilkens 1880: 245)

In different forms the sociological thinking of the early 20th century also contributed to the idea of racial taxonomies and it became more preoccupied with ideas of heredity. While also writing about ‘mixed races’ in 1908, the Danish sociologist Wieth Knudsen thus explained: ‘However there also exists a spiritual heredity and the ugliness among the mixed populations is accompanied by a lack of coherence in the mind, which stems from the differences in the molecules of the brain.’ (Knudsen 1908: 173). Nevertheless, the logic of Social Darwinism did not only lead to racial stratification into superior and inferior races, it also stratified gender: male superiority and female inferiority, and social stratification developed with the superior over the inferior classes (Gould 1996). The concept of ‘the social’ as a biologically determined entity was fundamentally represented by the correlation of racial and social taxonomies.
Within epidemiological research, the correlation of racial and social taxonomies can be traced to Villermé's views of the Parisian poor as ‘a race apart’ in the early ‘pre-Darwin’ 19th century (Coleman 1982). It was also adopted in the mid- and late 19th century British discourse on poverty and industrialised society (Himmelfarb 1984). In some academic circles it is still maintained that social divisions and their health-related consequences reflect biological rather than social differences (Gottfredson 2004).

The understanding of ‘the social’ as biologically determined was a persistent feature of Social Darwinist evolutionary theory from the mid-19th century onwards. In the early 20th century the ideas of the biological determinacy of ‘the social’ became more prominent in both sociological and public health-related thinking. In the widely articulated fears of ‘racial mixing’ and degeneration of a national gene pool, which were the core elements in the rising eugenics movements in the West (Engs 2005), the process of fusion between social and biological taxonomies can be detected. In the Danish case this was done by the historian Lene Koch, who, in her comprehensive analysis of compulsory sterilisation in Denmark, among other things, concludes that:

‘Often the mention of a hereditary liability has to be understood as an indication of that person coming from a family whose intellectual, financial, social, moral, residential and other circumstances differ considerably from the societal norm.’ (Koch 2000: 145)

In framing ‘the social’ as something similar to a national ‘gene pool’ a correspondence was articulated between the biologically/genetically inferior classes and the socially low classes. As the Danish sociologist Birck stated in an article in 1931:

‘There has been said much evil about mixtures such as Mestiz, Eurasians and Mulattos. I do not know whether it is biologically correct; but is it not a sufficient explanation that the one who does not belong to any environment and hates his father and despises his mother becomes unreliable and imbalanced? I have sometimes observed the same phenomenon in relation to ‘illegitimate children of noble descent’. (Birck 1931: 383)

The perceived psychological mechanisms of racial difference were compared to the perceived psychological mechanisms of class differences, thus creating a type of ‘social bastard’ as well as a ‘racial bastard’. This experiential grid did not alter the stratification of social classes but redefined ‘the social’ as a phenotypic manifestation of the biological (genotypic) foundation. By applying this particular logic, the way to alter undesirable aspects of ‘the social’, it also became the production and reproduction of a national gene pool, which became possible fields of intervention.

At the end of the Second World War, population studies dealing with eugenics or research into racial differences and their possible social meaning were shadowed by the Holocaust (Ramsden 2009/Ramsden 2002). The social and health-related scientific discourses articulating the biological determinacy of ‘the social’ were weakening, just as the concept race itself was being abandoned or treated with caution in many Western social scientific disciplines (Duedahl 2007).17 A ‘new’ functionalist current in the social scientific studies of social stratification, which had its impetus mainly from the US, dominated in the post-World War II years.

Functionalism and ‘the social’ 1950s–1960s
When Émile Durkheim (1858–1917) presented his study of suicide in 1897 little did he know that he had given birth to what was later (by critics) called ‘the oversocialised man’ (Wrong 1976/1999). Durkheim had argued that society itself, or more precisely ‘social laws’ (Hacking 1991: 182) within society, “forced” the individual to perform certain acts (such as suicide). Like most other epidemiological works, Durkheim’s study and the logics that his writings manifested depended on the rise of statistics and the 19th century ‘avalanche of numbers’ (ibid: 187). Already in the beginning of the 19th century, the Belgian statistician Adolphe Quetelet (1796-1874) argued that society demanded a certain quantum of crimes, or as he put it in his work on the ‘Faculties of man’: ‘we have seen that a given social organisation induces a certain number of virtues and crimes as a necessary consequence (…)’ (Quetelet 1842/1968: 101). Durkheim’s theory of the character of ‘the social’ and its laws thus articulated and elaborated ideas and logics that had existed in different forms for most of the 19th century and which were related to the broader, ongoing discussion of free will (Desrosières 1998).

Durkheim emphasised the importance of the social order, i.e., the organisation of society and, in particular, its ‘power over’ the individual:

‘If, therefore, industrial or financial crises increase suicides, this is not because they cause poverty, since crises of prosperity have the same result; it is because they are crises, that is, disturbances of the collective order. Every disturbance of equilibrium, even though it achieves greater comfort and a heightening of general vitality, is an impulse to bring about voluntary death. Whenever serious readjustments take place in the social order, whether or not due to a sudden growth or unexpected catastrophe, men are more inclined towards self-destruction.’ (Durkheim 1887/1979: 246)

While the organisation and social order of society was seen as a power structure in relation to the individual, the organisation of society itself was seen as being determined by the much more functionalist and harmonising ‘moral consciousness’ of society.18

As mentioned earlier, elements of the functionalist ideology had already influenced some of the epidemiological production of knowledge in the late 19th century. In the post-World War II years, functionalism became significantly more influential, partly because of what was termed ‘the orthodox consensus’ (Giddens 1982) concerning social stratification within the social sciences. The consensus consisted of a general agreement on the desirability of using a functionalist approach in social stratification studies (Crompton 1998).

The core element in functionalism is the conception of ‘the social’ as a system or whole. The parts of this system, i.e., social phenomena, broadly speaking, are described and analysed in relation to their function in maintaining the whole (Manicas 1980).

This line of sociological thinking, inspired by Durkheim, gained a prominent representative in Talcott Parson (1902–1979). In Denmark it was personified by the sociologist Kaare Svalastoga, who had studied in the US and later became an influential sociologist in the 1950s and 1960s. The new current contained a strong empiricist view on science and was centred on rigid demands in relation to data collection and validity; priority was therefore given to methods of data collection. Furthermore, the current often produced regularity-seeking and technocratic research programmes, intended to be part of larger social engineering programmes (Hansson 1996).
Although functionalist logics, such as those represented by Parson and, in Denmark, by Svalastoga, were often expressed in biological analogies, the idea of biological determinism was usually dismissed. As Svalastoga stated: ‘The biological explanation need not detain us long. Although it may help in explaining personal status changes, it does not help in accounting for the presence of positions differing in status.’ (Svalastoga 1959: 8). Apart from illustrating the aforementioned tendency in the post-war years to depart from biological determinist ideologies, Svalastoga’s statement also points to the central position given to the concept of status.

The use of status as the basis of stratification was inspired by the concept of ‘status’ as formulated by Max Weber. The stratification of ‘the social’ according to status was thus operationalised into measures of social prestige ranking or ‘general social status (...) regarded as the degree of deference shown to a person’ (Svalastoga 1959: 11). On the practical level, Svalastoga constructed ‘the social’ as a body of social classes stratified according to status, which came about by interviewing a representative section of the population and asking them to place a multitude of cards bearing the name of certain occupations in seven different piles according to their perceived status. This approach strongly resembled that North and Haat had used for the first time in the National Opinion Research Center (NORC) in Chicago in 1947 (Crompton 1998).

The basic functionalist idea in Svalastoga’s writings was similar to that of Kinsley Davis and Wilbert Moore in their classic paper from 1945, Some Principles of Stratification, in which they stated: ‘Social inequality is thus an unconsciously evolved device by which societies ensure that the most important positions are conscientiously filled by the most qualified persons.’ (Davis & Moore 1945: 243). Svalastoga agreed with this, stating: ‘We agree, that is, that a certain degree of inequality is the price to be paid for social efficiency (...)’ (Svalastoga 1959:10). Nevertheless, additionally he held that to a certain extent inequality also functioned as a device that minimised conflicts over scarce resources.

As the different occupations were grouped together in broader ‘status groups’, these became semantically equated with the concept of social classes. These differed greatly from those of Marxist stratification and the bio-social classes of the Social Darwinist stratification, but they were, nevertheless, designated by the same word.

In the Danish case the link between the sociological and the epidemiological production of knowledge is easy to identify as Svalastoga himself was a member of the committee behind the two largest (partly Rockefeller funded) social epidemiological studies conducted in the 1950s (the morbidity survey of 1950. Part I: The hospital survey and part II: The morbidity survey, see Lindhardt 1960/Komitéen til undersøgelse af...1958).

In these comprehensive studies the population was divided according to many of the well-known variables such as age, urban/rural dwelling, marital status and occupation. The researchers also divided the population according to ‘main occupation groups’ (Lindhardt 1960: 53) gathering occupations in larger groups such as ‘farming’, ‘industry’ etc. Finally, the researchers created three ‘social groups’:

‘However, one can look at the relationship of occupation and morbidity from a more social standpoint if one divides the population according to occupational position. Hereby it is understood as a vertical division into three groups: self-employed, such as executives/company owners and persons with similar positions; salaried employees; and workers, a division that does not consider whether the occupation is placed within farming, industry etc but considers only the social position of the individual in either this or that occupational group.’ (Lindhardt 1960: 53)
This ‘more social standpoint’ showed that ‘the working class’, as it was also termed (Lindhardt 1960: 57), had significantly higher morbidity rates than did the two other groups.

Lindhardt had used a similar social taxonomy in her collaboration with Knud Faber while conducting a survey of tuberculosis in Copenhagen in the 1930s (Faber 1935). Inspired by the official statistical surveys ‘the social’ was stratified into three (vertically positioned) groups: the upper-class, middleclass, and the working class (Faber 1935: 13). In this study there was a more explicit focus on income in relation to the occupational groups, which formed the larger social classes. However, Faber and Lindhardt made an interesting conclusion in relation to income as a criterion: ‘Despite their low wages, all of the abovementioned occupations [servants of different types and sales clerks] probably belong more to the middleclass (middelstanden) than to the working class.’ (Faber 1935: 20). Income could, in other words, not be the decisive criterion behind the stratification.

What is interesting in this study and the social epidemiological studies of the 1950s as well as in Svalastoga’s stratification theory is that in the transition from the taxonomy of occupations and main occupation groups to the social taxonomy of occupational positions or social classes the taxonomy becomes hierarchical. Taking ‘the more social standpoint’ thus means viewing ‘the social’ as a body stratified by classes. It is not apparent why this social taxonomy is vertical or what the basis of the stratification is. It could be based on income; however, as mentioned above this was not the only defining feature. Occupations with earnings less than those of the average middleclass could still be part of the middleclass and one could also imaging salaried employees who earned more than self-employed individuals. The stratification could also be based on the relations to the means of production, but in that case there would be no reason to rank salaried employees higher than workers.

The taxonomy created in these epidemiological studies bears a strong resemblance to the status-based social taxonomies of the functionalist stratification models, not least the one developed by Svalastoga (Svalastoga 1959:74–78). The underlying logic being that occupation is linked to certain social positions or degrees of social status (Hansen 1977). Occupation and a vague idea of social position or status thus become the primary filtering features of the experiential grid that ‘the social’ is seen through. In this perspective ‘the social’ is structured by the differential occupational positions, which are accredited certain social positions or degrees of status. Following the aforementioned functionalist logic, this distribution of status is part of the mechanism that ensures the most important positions are filled by those most qualified (Svalastoga 1959:10).

In the epidemiological studies no recommendations are made based on the conclusions; therefore, it is difficult to know what these studies identify as relevant objects of intervention. However, it is noteworthy that within the functionalist social stratification theories of the 1950s, we see the first appearance of the concept of lifestyle and the construction of its relation to individual and class behaviour in the so-called ‘Status correlated behaviour’ (Svalastoga 1959:19). The link between status and behaviour was formulated as:

‘Thereby change of status tends to mean change of lifestyle in the sense that both potential (attitudes) expected-and-desired (norms), and actual behaviour tend to seek levels of equilibrium that vary with social status. Extreme contrasts in lifestyle would thus be expected between high status persons (...) and low status persons.’ (Svalastoga 1959:19)

In the production of social epidemiological knowledge in the late 20\textsuperscript{th} and early 21\textsuperscript{st} century this idea of lifestyle and its relation to health have become of paramount importance.

Concluding remarks
Returning to the opening question: On what does ‘how you measure ‘the social’’ depend?

On the basis of the text corpus examined here, it seems fair to argue that ‘how you measure it’ depends on the experiential grid that ‘the social’ is filtered through in the process of producing epidemiological knowledge. In the Danish case examined here, there are apparent ruptures between different currents or ideologies in the production of epidemiological knowledge. The mid-19th century was characterised by the strong influence of the concept of culture and cultural evolutionism, leading the researchers to stratify ‘the social’ according to ‘cultural levels’ and create objects of intervention centred on the moral character and behaviour of the individual. This changed in the late 19th century where the idea of cultural evolutionism was challenged by ideas of the power of social organisation. The free will of the individual was questioned—but never discarded—in this period. Researchers focused on social patterns in mortality rates and increasingly interpreted them as the result of the organisation of society. This did not have any apparent effect on the social taxonomies applied in the research texts. The populations remained mostly stratified according to occupation and grouped in larger social classes, but the understanding of the nature of this stratification had changed. In contrast with the ideology of harmonious cultural evolutionism, the epidemiologists of the late 19th century identified the organisation of society itself as a causal agent. The consequence of this change was the creation of new objects of intervention centred on a social structural rather than a moral behavioural level.

The Marxist-inspired production of epidemiological knowledge, which emerged in Denmark in the beginning of the 20th century, went further. Power relations and the health-related effects of the social organisation of society were of paramount importance. By filtering ‘the social’ through an experiential grid that excluded most traits other than ownership, the resulting social taxonomy was simple but powerful: on the one side were those who owned the means of production and lived off profits and on the other were those who had to sell their labour. Profit and the capitalist system as such were identified as the original cause behind the health-related problems of modern industrialised society.

In stark contrast to the Marxist current, the Social Darwinist-inspired eugenics movement launched a view of ‘the social’ as the manifestation of the underlying biological (genetic) makeup of the population. Stratification of superior races over inferior races went hand in hand with the stratification of superior classes over the inferior classes, and both types of stratification could be explained within a bio-social genetic framework. As genetics was seen to form the basis of ‘the social’ it was also genes, i.e., the production and reproduction of a national gene pool that became the most obvious field of intervention.

By the end of the Second World War it seems that the ideas of biological determinism had lost much of their former strength. The so-called ‘orthodox consensus’ within the social sciences made a Parson-inspired functionalist approach to social stratification studies the most used model.

In this approach the concept of social status became the basic criterion for the construction of social taxonomies. In the social epidemiological research of the time, a notion of ‘social position’ seemed to portray this idea of status in the social taxonomies used.
On a more general level it thus seems very probable as Krieger argues that epidemiological research embodies particular ways of seeing as well as knowing the world. The experiential grids and the social taxonomies that the social epidemiological production of knowledge creates are themselves products of certain concepts of the nature and origin of ‘the social’. In this perspective, social categories—being the product and manifestation of the social taxonomy—are always, and cannot escape being, an operationalisation and thus the reflection of a more profound conceptualisation of ‘the social’. As a minimum they will always contain logical and conceptual implications, i.e., logical and conceptual limitations and possibilities, which indicate a certain concept of ‘the social’, even if this remains unarticulated in the specific research situation.

The concepts of ‘the social’—its nature and origin—vary over the course of history and do not simply replace one another as steps on the ladder of enlightenment and scientific progress. As the configuration of the experiential grid changes, so do the possible objects of intervention. Thus, when we can find radically different objects of intervention proposed within the same historical period, they can be seen as an illustration of different ideas of ‘the social’ coexisting and conflicting.

References


Bentsen, J. (1858), Om Dødeligheden i Livets første Aar, udarbeidede med specielt Hensyn til den forestaaende hygieiniske Kongres. Særskilt aftryk af Ugeskrift for læger. København.

Bentsen, J. (1861) ’Om nogle af de forhold, der betinge dødeligheden, in, Bibliotek for Læger 2: 241-345.


Hindenborg C. E. (1943), *Folkesundheden og Danmark*, National-Socialistiske Smaaskrifter no.1, København


Preisler, O. (1916), *Bibliotheca Medica Danica*, København


Ravn, N. E. (1850), Forholdet mellem alder, social klasse og menstruation, in *Bibliotek for Læger*, række 3, bd. 7: 2-17


Rubin, M. (1896), En Kulturmaalestok. in, *Nationaløkonomisk Tidsskrift*, no. 3, 4: 545-565


Sørensen, Th. (1884), *De økonomiske Forholds og Beskæftigelsens Indflydelse paa Dødeligheden. Første Afdeling*, København.

Sørensen, Th. (1887), Regelmæssigheden i de sociale Fønemener og den fri Vilje, in, *Tilskueren*, København.

Sørensen, Th. (1889), Maximalarbejdstiden set fra et hygiejnisk Standpunkt, in, *Tidsskrift for Sundhedspleje*, no.1: 123-139.

Sørensen, Th. (1890), ’Den mellem Samfundslagene optrædende forskjel paa Afkommets Dødelighed och Aarsagerne dertil’, in, *Ugeskrift for læger*, april, 1890

Trostle, J. (1886), ’Early Work in Anthropology and Epidemiology: From Social Medicine To The Germ Theory, 1840 – 1920’, in, Janes, Craig Robert and Stall, Ron and Gifford, Sandra M., (eds.) *Anthropology and Epidemiology*, Dordrecht/Boston/Lancaster/Tokyo


20


1 Additionally, it is likely there will be more than one perception of ‘the social’ at play in any given period. I return to this later in the paper.

2 Please note that when I use the term ‘deliberate’ it is not to create an aura of ‘manipulation’ around the medical writings. It is merely to underline the intentional application of the social categories.

3 I constructed a *topical* text corpus (Bauer and Aarts 2006) of research texts on relations between health and ‘the social’. The topical text corpus I examine here consists of 30 texts from 1858–1960 including research texts (articles and monographs), discussion papers (published in academic journals), reviews and textbooks. I searched for these texts in *Bibliotheca Medica Danica* (Preisler 1916) and *Index Medicus Danicus* (1913–1976) covering the period from the earliest Danish medical publication until 1976. I also used the Royal Library database (REX) and the Danish Journal Index. The 30 texts are the total number of texts the search yielded.

4 Biographies have been written on several of the authors used in the material, which contextualise their academic writings within their ‘life histories’.

5 Foucault briefly defines discursive formation as ‘the principle of dispersion and redistribution (...) of statements’ (Foucault 1969/2006: 121).

6 A total search for all appearances of the concept ‘social’ in the texts was conducted using the software program Wordsmith 5.0.

7 A brief comment is necessary when discussing the conceptual history approach. Most, if not all, research within *Begriffsgeschichte* is concerned with concepts in the form of substantives such as class, race, revolution etc. The case of ‘the social’ differs slightly because it is an adjective (social) made into a noun (the social). This ‘grammatical transition’ was widespread in studies by Foucault (1991), Rose (1999), Deleuze(1977) and others. Seemingly, it arose through efforts to analyse and represent the reconfigurations of boundaries between the economic and the moral domains of the 19th century and the unfolding of governmentality. As the moral domain was reframed in the late 19th and early 20th century a new domain or *sector*, ‘the social’, emerged in which aspects of life which were previously understood as belonging to the private sphere became ‘public’–in the sense that they became objects of governmental techniques (Rose 1999: 112). The grammatical transition from adjective to noun can thus be seen in relation to this line of thought, where ‘the social’ is understood as a societal domain parallel to ‘the economy’. Operating on a conceptual level, as this study does, ‘the social’ is to be understood as the sum of meanings it acquires in the multitude of constellations where it appears as an adjective. When studying a conceptual constellation such as *social class*, what I find interesting is not what ‘social’ says about (the)class, but what *class* says about (the) social.

8 This is necessarily a very crude overview. The ideologies are not easily confined to such precisely delimited periods. They overlap and in some cases also seem to interact in different constellations. Ideas and logics pertaining from one ideological current thus reoccur or leave traces in the production of epidemiological knowledge in other periods.
It should also be remembered that a transition occurred in the second half of the 19th century from the dominance of the miasma theory to the dominance of the germ theory (Porter 1999/Trostle 1986). Under the new bacteriological paradigm, the historically and sociologically inspired epidemiological studies had to give way to the biological and parasitological studies of the specific micro-organism, understood as the (only) disease determinant. According to Trostle the historical and sociological types did not disappear; they became ‘a minority view’ (Trostle 1986: 49) concerned with subjects such as occupational disease and in general the effects of the increasing urbanisation and industrialisation. This picture also matches the development in Denmark where epidemiology, developing from the medical subject of hygiene, became particularly concerned with ‘pre-bacteriological’ hygienic problems related to housing, nutrition, workers and factory hygiene (Bonnevie 1955: 591).

10 In the case of Linné the linguistic system became known as the binary nomenclature.

11 Foucault also lists a set of epistemological restrictions on the experience of nature, inherent in the work of Linné such as the privileged position of sight at the expense of experience given by other senses such as smell, taste etc. (Foucault 1966/2002: 144 pp.). While these restrictions seem relevant in relation to Linne and the taxonomies of natural history, it seems that other disciplines, for example medicine, to a larger extent incorporated other senses such as smell and hearing (e.g. the stethoscope) in the creation of disease taxonomies.

12 It is termed ‘diffusionism’ as opposed to ‘evolutionism’ in relation to the (anthropological) debates about the origins of different cultures.

13 For a more detailed analysis of the emergence of new epidemiological objects of intervention in1858–1914 see Christensen 2009.

14 For references to Marx in the epidemiological writings in this period and an introduction to Marx by one of the epidemiologists see Sørensen 1889: 125 and Westergaard 1901.

15 It did, however, not become an independent subject until 1967. Until then the subject remained divided between hygiene and legal medicine, educating the young doctors in respectively (social) epidemiology, preventive medicine and health and social legislation.

16 It is beyond the scope of this article but worth mentioning that Marxist ideas gained significantly more scientific attention and influence at their ‘revival’ in the 1960s and 1970s both in sociological and epidemiological production of knowledge.

17 It should be noted that the end of Second World War did not change the eugenic practice of compulsorily sterilisation of the ‘feebleminded’ in Denmark. These practices continued into the 1960s (Koch 2000: 147).

18 A good example of this functionalist terminology is given in the following quote: ‘As a matter of fact, at every moment of history there is a dim perception, in the moral consciousness of societies, of the respective value of different social services, the relative reward due to each, and the consequent degree of comfort appropriate on the average to workers in each occupation. The different functions are graded in public opinion and a certain coefficient of well-being assigned to each, according to its place in the hierarchy.’ (Durkheim, 1897/1979: 249)

19 Together with Parson, Davis and Moore were frequently referred to in Svalastoga’s work. For the mentions and references see Svalastoga (1959) p. 1, 8–9, and 16.