The Science of Protection: Gender-based Legal Arguments for the Ten-hour Work Day

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I

In October, 1907, attorney Louis D. Brandeis submitted a brief to the United States Supreme Court on behalf of the National Consumers’ League in the case of Muller v. Oregon. The brief defended the constitutionality of a 1903 Oregon law which limited the work day of women employed in “any mechanical establishment or factory or laundry” to ten hours. Written in partnership with the NCL’s publication secretary, Josephine Goldmark, this brief established a new form of legal proof. Instead of deriving a position based solely on legal precedent, Goldmark and Brandeis used scientific data on the status of women workers in the industrial workplace to make their argument.

In unanimously sustaining the law in 1908, the high court accepted both the nature of this evidence and the assertion that the woman wage-earner deserved “to be placed in a class by herself” based on her situation as a potential wife and mother, not on her status as a worker. In addition, the Court’s decision superseded the freedom-of-contract doctrine. Derived from the Fourteenth Amendment to the United States Constitution, this precept held that the state could not interfere with an individual’s right to negotiate his or her conditions of employment, except in the interest of the public welfare. Judicial decisions in the earlier cases of Ritchie v. People (1895) and Lochner v. New York (1905) had struck down measures limiting the work hours, respectively, of female and male industrial workers on the basis of state infringement on workers’ Fourteenth Amendment rights. By establishing that women workers constituted a distinct legal category and thus deserved special treatment, the Court’s decision in the Muller case set a precedent which remained in effect until the late 1960s. The Muller case, then, shaped labor law for women for sixty years.
By 1915, Goldmark and Brandeis had filed fourteen similar briefs on behalf of the NCL in defense of labor laws regulating women's work lives, and could claim victories in all of its efforts along these lines. Branching out, this team took up the case of Bunting v. Oregon, which concerned an Oregon law mandating a ten-hour day for male industrial workers.

The Bunting brief resembled that of Muller in format and in the nature of its evidence. It, too, attempted to mobilize scientific data on behalf of a maximum work hours law and argued that such a law was necessary to preserve men's complementary gender roles as breadwinners, voters, and soldiers. The Supreme Court also upheld Oregon's hours law for men in a 1916 decision.

Goldmark's and Brandeis' briefs' successes validated a new form of legal evidence and argument called sociological jurisprudence. This article examines the Muller and Bunting briefs as examples of this new approach to legal argument and reform, one that claimed to be responsive to the social realities of an increasingly urban and industrial nation. Because of its reliance on scientific experts for testimony and its profession that it operated in a scientific manner, its practitioners regarded sociological jurisprudence as a scientific method of argument and proof.

Derived from the pragmatic philosophies of John Dewey and William James, sociological jurisprudence posed an alternative model to the tradition of legal formalism, which maintained that the law was separate from politics and internally rational. Formalism depended chiefly on judicial interpretation and precedent. Proponents of sociological jurisprudence countered that the law should be more responsive to social circumstances and needs. Experience and knowledge, external to the law and scientifically obtained, must be considered in order to sustain a legal system that promoted social justice and took the general welfare into account. The evidence used in such a legal process, then, drew heavily on sociological data and the sciences generally. Advocates such as Harvard Law Professor Roscoe Pound joined Brandeis and Goldmark in promoting "a pragmatic, a sociological legal science" that would also be characterized by "conformity to reason, uniformity and certainty."

The first section of the Muller and Bunting briefs conformed closely to the traditional format of brief construction, addressing the issues of constitutionality and freedom of contract, and citing domestic and foreign laws relevant to the case. It was in the second part of the brief that innovation lay. In placing an argument before the Court, Brandeis and Goldmark relied less on the weight of past court decisions than what they termed "facts of common knowledge." They drew these facts from a multiplicity of government reports, sociological studies and treatises, medical and physiological works, published testimony by
individual labor activists and employers and texts documenting working conditions in the various occupations and trades.

The Muller and Bunting briefs’ credibility lay in their reliance on the implicit testimony of social and natural scientists and other experts, on the data which the authors extracted from scientific sources. Just as earlier movements for public health, education, and public relief shifted from moral to scientific reform, activists for labor reform cloaked themselves in a mantle of scientific legitimacy in order to advance their case.

Ultimately, the briefs will serve as a case study to identify what constituted the science in scientific social reform and the language which expressed it. In particular, I will focus on the concepts which served to organize the briefs: special physical organization of women, the disease of fatigue and the implications of these concepts for private and public life.

Goldmark and Brandeis grounded the briefs’ evidence in a framework which validated sex and gender difference as scientific fact, the science of sex difference. This way of thinking developed in the nineteenth century as “a biology of sexual incommensurability.” Its premise rested on what Cynthia Russett termed “the great principal of division of labor;...men produced, women reproduced.”

Scientific method and evidence contributed the authority which transformed common assumptions about male and female biological, social and cultural roles from “understanding” to “fact,” from gender ideology to legal evidence and truth.

In crafting their argument, the authors “spoke” only minimally. The voices of the experts resonated throughout the briefs. Brandeis and Goldmark stated their case in a paragraph, sometimes in as little as a single sentence. They provided the thesis statement to which the various sources contributed documentation. The authors extracted terse and trenchant passages from the sources to exemplify and make concrete their contention. In doing this the authors created the impression that they were not merely defending a “side,” but a consensus; a representation of the apparent unity of many different interests and perspectives. Objectivity lay at the heart of their argument.

The authors were not merely presenting the voices of experts to undergird their case. What was entered into evidence were the bodies of working-class men and women with the “facts of common knowledge” as commentary on these people’s lives, habits, experiences, and basic needs. Their lives were laid open for public display, their material existence captured and dissected by scientific experts. In this way, the authors offered up a “type,” a composite male or female individual representation, one which stood for all industrial workers. Thus the scientists, speaking through the reformers, guided the reader through a detailed examination of the evidence: the male and female bodies of wage-earners.
The objectification of industrial working women and men was a central feature of the briefs filed in the *Muller* and *Bunting* cases. By reducing working-class people to their bodies, by demanding social change based on the needs of those bodies and by designating scientific experts and themselves as the spokespersons for those bodies, Brandeis and Goldmark used the authority of science to invoke a needs-based discourse on behalf of those they claimed to represent. In doing so, these scientific reformers deprived working-class women and men of agency and a political voice in order to speak on their own behalf. This strategy effected a shift from the rights-based discourse of wage-earners and unionists who demanded the eight or ten-hour day as a right and a work entitlement to one emphasizing needs, protection and social welfare.¹¹

In turn, this strategy depended upon the explicit acknowledgement of the femaleness and maleness of these bodily representations, on their gender. This study addresses Joan Scott’s concern that “one needs to think about the effect of gender on social and institutional relationships, because this thinking is often not done precisely or systematically.”¹² Gender ideology was instrumental in the structuring of public policy, as well as the success of the scientific strategy of social change.

It is no coincidence that this strategy arose at the same time as the institutionalization of scientific management both as practice and ideology and the emergence of industrial medicine as a distinct field of American medicine. Brandeis and Goldmark both advocated scientific management as a way of rationalizing the industrial workplace. Dr. Alice Hamilton, the founder of industrial medicine, was a colleague of the NCL’s Florence Kelley at Hull House. Hamilton conducted investigations of hazardous work sites in conjunction with branches of the Consumers’ League. Indeed, social reform movements as a whole desired to be identified with this new scientific spirit, with an ideology of rationality, objectivity, efficiency and impartiality. The *Muller* and *Bunting* briefs are a product of this impulse.¹³

II

Brandeis and Goldmark constructed the primary defense for both Oregon ten-hour day laws on the evidence of the damage that overwork inflicted on workers’ bodies. However, just as they differentiated between female and male body types, between bodies suited for, respectively, reproduction and production, so did they distinguish between the nature and significance of the damage to female and male wage-earners. More to the point, the vulnerable and peculiar female body, as differentiated from the vital and normal male body, formed the heart of the case the authors wished to make in both briefs.
The *Muller* brief asserted that women's bodies in and of themselves formed the primary source of industrial danger for women. Brandeis and Goldmark carefully built their case around this point, layering their arguments in the text and hammering their points home with the chosen testimony of expert after expert.

Women's "special physical organization" placed them at a particular and substantial risk as industrial wage-earners. The "special" design of the female organism not only differentiated them from men, but affected their ability to withstand physical insult. "Women are fundamentally weaker than men in all that makes for endurance: in muscular strength, attention and application. Overwork, therefore, which strains endurance to the utmost, is more disastrous to the health of women than of men and entails upon them more lasting injury." Working with hazardous materials such as lead or phosphorus could impair women to a much greater degree than their male counterparts. However, even in industries which did not expose workers to poisonous substances, women were more susceptible to the effects of poor ventilation, airborne dust and extremes of hot and cold than male workers. Thus even before women's bodies confronted industrial life, their frailty was a given.

The authors then drew on the authority of scientific experts to buttress their claim. Excerpts from authoritative texts documented the shortness of women's muscles, the "smallness," "narrowness," and "delicate nature" of the bones of women's extremities and the "shallowness of the pelvis." Their blood and muscle mass contained more water. In general, they lost more days of work due to sickness than men did. Thus the brief maintained, women's bodies were physiologically and constitutionally delicate and displayed a thinness in both fluid and tissue components. Such a frail body was no match against the "insensitive iron" of industrial machinery.

While these particularities were significant, they only served as a prelude to the most vital difference: women's reproductive organs. The authors paid little detailed attention to the whole (or rest of the) body, devoting the most space to the "specific evil effects on childbirth and female functions." Their case hinged on proving that women's reproductive capacity and the organs which performed that function defined women as individuals. Categorizing all women as "future mothers," Goldmark and Brandeis designated women's reproductive organs as that corporal system which embodied them, making the female reproductive tract represent women's bodies as a whole. According to one medical source,

women experience a periodical semi-pathological state of health....The natural congestion of the pelvic organs is augmented and favored by work on sewing machines.
and other industrial occupations necessitating the constant use of the lower part of the body. Work during these periods tends to induce chronic congestion of the uterus and appendages, and dysmenorrhea and flexion of the uterus are well known affections of working girls.10

Thus, women were not only more vulnerable to the stresses which the workplace presented, but the nature of industrial work itself wrought a distinct havoc with women's reproductive organs.

Long hours, which meant increased exposure to these conditions, furnished the final coup de grace to women's bodies. While the long hours that women workers put in at the factory and mill resulted in the "general deterioration of health (which eventually) undermines the whole system," industrial labor wrought especially devastating effects on the reproductive system. The authors catalogued the reproductive disorders which resulted from long hours of work, including miscarriage, difficult delivery requiring forceps, uterine displacement, nursing problems, and infant mortality. They stressed that these problems were exacerbated by long hours of standing, as saleswomen suffered similar difficulties from merely being on their feet, "the one position most calculated to cause the manifold diseases peculiar to their sex, and direfully does nature punish the disobedience of her laws."11

Because the Muller brief set a standard of women as particularly affected by industrialism, Bunting had to demonstrate the impact of manufacturing conditions on both women and men, as evidenced in the sections on national vitality, general health, and infectious disease. In these sections, Goldmark and Brandeis drew on sources that utilized figures on all adult workers to show the decline of vitality in all workers. However, once that fact was established, the authors then particularized their data to the experience of male workers to reveal industrialization's discrete consequences on working-class men. Again, the authors emphasized the consequences of industrial labor on the body. In this brief, it is the male body which stands in relief, with its virile features exhibited before the court.

Unlike women, the men in the Bunting brief appeared in full body profile. The brief examined the entire male body, indicating the effects of overwork on the ears and eyes, on the nervous system and muscle tissue, on the organs and on the body as a whole. The level of scrutiny was meticulous and detailed. Similarly, the degradation involved all body systems and mechanisms, and the aftermath of overwork was uniformly devastating to the body as a whole.12

Beginning with the section on "Fatigue and Nervous Diseases," the authors designated a broad range of ailments from which the male worker suffered as
“modern occupational diseases.” The common basis for these disorders lay in their causative agent, overwork, and in their ultimate consequences: premature aging, a loss of vitality and productivity and devastating repercussions for public life and welfare.33

For men, however, the main villain was not merely overwork. The experts convinced the authors that a more specific agent, a pathogen, was responsible for the degeneration of the male breadwinner. That pathogen was strain, and the resulting disease, fatigue.

III
Strain and fatigue are concepts that begin to emerge in the Muller brief. The authors alluded to the threat of “the new strain in manufacturing,” “the growing strain of modern industry,” “the greater physical strain upon the worker,” and the “fatigue and exhaustion” which affect female workers in particular. They cited a number of authorities to demonstrate the impact of “physical fatigue” on the reproductive system and childbirth, including premature birth and high infant mortality rates. Overwork and fatigue wrought a “special evil effect on childbirth and female function,” to Brandeis and Goldmark. However, at this stage of the briefs, fatigue was merely a consequence of modern industrial work and was not characterized as a distinct disease, as a disorder with a specific agent. As we will see, fatigue served a much more significant function when Brandeis and Goldmark justified the ten-hour day for male workers.34

In making their case for male workers, the authors did not depend on an argument emphasizing bodily inferiority. On the contrary, they posed the ironic situation of the virile and vital male body in its prime, slowly diminished and finally cut down by that situation that had formerly helped define manhood and its privileges: labor and its concrete products. In this case, a toxic external agent invaded the healthy body (a socially and economically productive entity), degraded it and left in its wake an organism that no longer benefitted, but instead threatened society. Caused by “an actual and active poison,” this disease, fatigue, robbed men of their natural resistance to infectious disease, their sense of judgement, their ability to work productively, their youth, their will to refrain from drinking and other moral excesses, their general health, their manhood. In that state of disability, men could no longer perform the duties the community and the state expected of them: production, family support, political participation and military service.35

The phenomenon of fatigue was the organizing concept of the Bunting brief and was explicated in great detail. Its chemical, nervous, and muscular components, as well as its implications for the whole body were laid out. The experts’
voices pronounced the effects of prolonged fatigue to be permanent and its effect on the community to be profound.

Goldmark and Brandeis labored hard in their effort to convince the justices that fatigue was a phenomenon that would justify the passage of a law regulating work hours for men. After introducing the disorder in the initial section, they presented a detailed argument concerning its etiology, its relationship to the industrial work place, its determination and measurement, its physical, social and economic consequences and, finally, its remedy. The authors had to prove that fatigue was a condition worthy of intervention by the police power of the state, due to its threat to the public welfare. As with the consequences of injury to female reproductive systems, the impact of fatigue on male bodies had to be accepted as reason enough to suspend a legal doctrine as basic as the freedom of contract.

The strain induced by industrial labor appeared to be the agent which caused the phenomenon of fatigue. Strain was portrayed as both nervous and physical, with both types seen as equally significant and detrimental. The authors never defined strain, but they identified three factors which contributed to the strain on working bodies: speed, monotony and piecework. The speed of work due to faster-paced machines, the greater number of machines an individual worker must tend and the increasing complexity in work processes, requiring a greater watchfulness exacted a heavy toll from industrial operatives.16

In addition, the monotony of motion caused by the division of craft work into its component parts damaged the worker in two ways: "first in denying to the man opportunity for the exercise of his other productive faculties; secondly, in overtaxing and degrading by servile repetition the single faculty that is employed." Thus, this type of labor caused the dulling of the mind and ambition as well as the deterioration of the body. Other sources describe the worker's reduction to a machine-like or animal-like status, depriving him of his humanity and his human capacity, his ability to control and take pride in his work. On top of fatigue, then, there was demoralization and the loss of masculinity, of the productivity and initiative that formerly defined his male status.17

Finally, piece work, or compensation based on the number of articles produced versus an hourly rate, intensified "the evils of speed and monotony." The demands of piece work included the stress of continuous work into overtime hours, the anxiety of falling behind, and the outside "pushing" of contractors.18

Scientists also studied the mechanical aspect of fatigue using devices especially rigged for this purpose. These instruments, called ergographs (or that which records the amount of work performed) and myographs (that which records muscle performance) measured the intensity of muscle contraction of
frog or rat muscle tissue, or the action of a human muscle group, such as the finger. The authors included the inscriptions of these instruments as well as the written narrative of the experiments and findings, which graphically illustrated the capacities for work as well as the results of muscular overwork. This visual evidence demonstrated the effects of work, fatigue, and exhaustion on muscle tissue. Fatigue, then, could not only be seen in physical appearance and performance, but its presence could be recorded on paper and quantitatively measured. In effect, the Bunting brief affirmed the disease fatigue and its sequelae as concrete and pernicious and as a matter of social concern.39

Fatigue, then, provided the explanation for the degradation of healthy men in the industrial workplace, just as the frailty of child-bearing bodies served as the explanatory agent in women’s deterioration. What remained was connecting these seemingly private events with public life.

IV

In both briefs, the authors contended that the consequences of overwork bled out beyond the individual workers’ bodies into their family lives, their communities and the nation, affecting both private and public life. In detailing the documented benefits of shorter hours for women in the Muller brief, the authors stressed “the improvement in home life” of both single and married women. For the unmarried female worker, this translated into time to learn “the art of home-making, because on this the health, welfare, and prosperity of her whole family will depend....She should be learning to keep house if her future household is not to be disorderly and a failure.” Similarly, married women would benefit by deriving more time to tend to the material and emotional needs of their family such as meals, sewing and time with children. As a coda, an excerpt from a German report on women’s work reminded the reader that “free time is not resting time, as it is for a man...there is always a variety of work waiting.”39

Similarly, the negative consequences for working women of long hours in manufacturing and other industrial concerns affected their home life. Yet it also rippled out from the individual lives of the affected women and their immediate families to their local communities and, ultimately, to “the welfare of the nation” and even the human race as a whole. The female wage-earner who was debilitated by excessive hours in the workplace posed a threat, first of all, to the well-being of her family. Such mothers also had little energy to properly raise their children and provide them with a suitable home. Additionally, these women stood a greater chance of bearing “puny, sickly, partly-developed children” who in turn would produce offspring with even more pronounced defects, and so on down the line. “It is well known that like begets like, and if the parents are
feeble in constitution, the children must also inevitably be feeble." Those children who survived this process were more likely to lead lives of "pauperism and crime," thus necessitating an increasing need for poor relief and increasing the amount of citizens dependent on community support. Not only did the children of affected women workers produce less, but they acted as parasites on the community.33

The authors quoted a New York Bureau of Labor Statistics report as a comment on this state of affairs and to offer a remedy:

If a reduction in the hours of labor does promote the growth of a purer and better family life, it will unquestionably result in the production of greater material wealth on the part of the generation trained under its influence; nothing in fact will so effectively diminish the vast number of criminals, paupers, and idlers, who, in the present generation, consume the people's substance....The importance of a good family life...is the fundamental argument for a shorter work day.33

Nations also reaped the deleterious effects of excessive work hours for women. The authors cited British socialist Beatrice Webb in noting that disregard for the work lives of women damaged the "nation's working capital" if one saw these workers as "truly a portion of its working capital as its land, its machinery, or its cattle....In deteriorating the physique, intelligence, and character of their operatives, they are drawing on the capital stock of their nation." Maximum hours legislation should not be perceived as "romantically philanthropic," but as laws derived from "common sense and economic prudence." Thus, much like reducing the body to a "type," here bodies merge with industrial capital stock and the work process and become producing machines.33

However, references to women which identified them as producers were rare. More commonly, the authors stressed that unhealthy individuals, families and communities exacted a high price from the nation and implicated "the over-work of future mothers" as the cause.34

M. Jules Simons cited testimony before the French Senate that encapsulated both the breadth of female overwork's effects, and the fundamental nature of private life in the nation's public functioning. "When I ask, when we ask, for a lessening of the daily toil of women, it is not only of the women we think; it is not principally of the women, it is of the whole human race. It is of the father, it is of the child, it is of society, which we wish to re-establish on its foundation."

While the damage to women mainly emanated out from the home, men's disfigurement resonated immediately in both the public and private spheres.
Their bodily degeneration was mourned in that it was a loss to the family of a breadwinner, to the community of a productive worker and consumer, to the nation as a voter and citizen, as well as a potential soldier. Indeed, the male body seemed to personify all that was public.

Following this exquisite examination of male deterioration, the brief's focus then shifted from the individual male body of the industrial wage-earner to the collective social body of the nation-state and its apparent loss of productivity, of vitality, and indeed, of potency. The authors drew a parallel between the decline of the male worker's body and the concomitant deterioration of the nation, consequently drained of vitality, implying a connection between the worker and the nation-state as a masculine entity. This is most closely articulated in the opening section on the declining level of "national vitality," as evidenced by "the extraordinary increase both relative and absolute in the so-called degenerative diseases, that is, diseases of the heart, blood vessels and kidneys" in contrast to the decreasing impact of contagious diseases.

This record of the breakdown of the most important organs of the body discloses a menace to American vitality...it is clear that one important contributing factor is the stress and strain of American ways of living and working....Statistics prove that these diseases reduce the working, productive period of life, the period of greatest industrial activity. They are thus peculiarly disastrous for industrial workers, already subject to higher incidences of death and disease than other classes of society.16

Succeeding sections on the political, social and military effect of overwork underscored and particularized these notions of national degeneration and devitalization. A "lessening of the vigor and vitality" of male workers would also manifest itself in decreased attention to political and civic duties due to ignorance, lassitude and sheer lack of time.17

According to sociologist Frank L. McVey,

If men are to stand as the head of families, as electors, and even as operators of machines, they must have time for education and family life....The responsibility of government increasingly falls upon the working classes in a democracy. Shorter hours can give the worker the leisure for careful study of present-day problems thrust more and more upon the electorate for decision. It is not, then, as a private measure that this movement is acceptable, but as a public necessity.18

Florence Kelley further asserted, "Without (leisure time),...manhood becomes
ignoble and unworthy of citizenship in the Republic."³⁹

The physical decline of potential soldiers struck most viciously at the nation's ability to defend itself and its institutions.

Soldiers alone are not all that a nation needs for defense, no matter how well they may be trained and equipped, or drilled and officered, or supplemented by naval strength or fortifications. The foundations on which national defense must be built are social, economic, and human. The question involves every element of the problem of preserving and perpetuating even-handed justice to all, social stability, economic strength, independence, a patriotic citizenship, and a rugged, stalwart and virile race.⁴⁰

"How much longer may we hope successfully to meet the struggles of peace and war with the proportion of inactive, flabby-muscled, low-powered Americans constantly increasing?" queried a public health official. "How long can the nation endure with the physical fitness of its producers and defenders steadily declining?"⁴¹

This equation of the form of the male industrial worker and the social body of the nation-state emphasized several things: 1) a desire for identification of state interest in the male industrial wage-earner, thus reinforcing the connection with the public welfare; 2) the suggestion that all American males share a common interest, one that is served by this legislation; 3) reinforcement of the analogy that just as men safeguard the family and the community, so the state must safeguard its citizens. The experts also clearly acknowledged that male workers formed the greatest mass of participants in the armed forces and in wars.

Again, science and "facts of common knowledge" served to form the bridge between the male industrial worker's body and the masculine corpus of the state. The ten-hour day for women would sustain the private sphere. Just as the female body reproduced society and nurtured its individual members in the private realm, so the male body represented both the state and the public sphere. With the remedy of the shorter work day for men came the renewal of the productive body, the body politic and the national role assigned to working-class men.

Finally, the authors also claimed that such laws would serve the general welfare by imposing discipline in the workplace. Brandeis and Goldmark maintained that a ten-hour day would provide "regularity of employment." This not only served a humane purpose in diminishing levels of unemployment by distributing work time more evenly over the course of a year (versus a tendency for seasonal work and rush periods), but also yielded a more disciplined work force.
The problem with boom-bust work cycles was that workers did not develop "the self-control and good habits engendered by a regular and definite period of moderate daily employment." Such a uniform pattern of work, with set start-up and stopping times, would instill discipline and dependability in workers. Furthermore, laws limiting the length of the workday would decrease worker discontent and thus avoid strikes. "The real cause of many of these strikes is overwork." 41

V

The emergence of sociological jurisprudence, as represented by the Muller and Bunting briefs, institutionalized scientific method as a means of legal procedure and social reform. Using evidence produced by both social and natural scientists, Brandeis and Goldmark convinced the U.S. Supreme Court that the need for a ten-hour day for industrial workers justified the suspension of the freedom-of-contract doctrine. The voices of scientists in the briefs conferred authority upon these social reformers, allowing them to act as spokespersons for working-class people and to successfully argue for the ten-hour work day as a remedy for overwork.

The briefs’ authors reduced the objects of reform, wage-earning women and men, to representative body types of their gender and class. They then systematically revealed these bodies’ experiences when exposed (or, in the case of overwork, overexposed) to the hazards of the industrial workplace. For female workers, the risks lay within themselves. Their already “special” bodies, compromised by the presence of their reproductive organs, incurred further weakening after long hours in the factory, the mill and the laundry. Men, on the other hand, delivered up their normal, healthy bodies to the industrial process, only to have them degraded by the insidious disease of fatigue. In both cases, industrial life stripped workers of their essential femininity and masculinity. They were left incapable of performing the sex and gender roles designated to them by nature and society. Reformers, then, presented workers as victims, helpless in the face of industrial assault which struck at the heart of their essential identity as women and men.

The authors also represented the injuries inflicted upon working-class bodies as affecting more than just those specific individuals. By promoting the notion that all of society was affected, they persuaded the Court that the hours laws served more than the interest of workers; they benefitted the general welfare. A consensus of scientific opinion called for hours legislation as a social imperative and as a national need. In establishing themselves as the representatives for both wage-earners and the general society, and as part of the chorus of
scientific voices, the reformers authenticated their position as impartial and objective professionals who transcended personal and class interest.

Objectivity played a central role in the credibility of both the reformers and their evidence. Because they used evidence considered scientific, Brandeis and Goldmark could represent the information employed in the briefs as objective fact. The authors constructed the principles used to organize the briefs, special physical organization, fatigue and their implications for the public welfare, using the words and findings of social and natural scientists.

Initially, the authors provided convincing proof of the effect of overwork by virtually dissecting wage-earners’ bodies and revealing the specific kinds of deterioration evident in female and male anatomy. This is particularly true in the Muller brief with the presentation of dysfunctional female reproductive organs and the medicalization of overwork. In the Bunting brief, Brandeis and Goldmark offered data produced by more sophisticated and technical means. In order to verify fatigue as a disease, they demonstrated its existence through the chemical analysis of muscle by-products and the instrumental measurement of muscle performance. The authors did not depend on heart-rending portrayals of broken women and men. Their evidence reflected the stark, unemotional and disinterested nature of information which scientific processes generated.43

Similarly, social scientists produced observations on the impact of overwork on family dynamics, community stability, societal coherence and national productivity. The text regarded their data with the same weight as that of the natural scientists and presented it as impartial and objective fact as well.

It is within this context of objectivity that the objectification of female and male workers took place as well. By reducing them to their essential body types, extracting knowledge from these bodies and rendering them passive, reformers were able to derive the necessary justification for hours laws from these bodies. In addition, their very passivity may have supplied workers with the quality needed to qualify them for legal protection: need and dependence.

Just as the medicalization of overwork and fatigue made it the purview of physicians and scientists, its broader implications for the social, political and economic aspects of public life in the United States made it an appropriate concern of legislation, policy, and jurisprudence. Social reformers advocated political and legal remedies for overwork using a needs-based discourse that employed the language of social science.

In sanctioning such laws for women after 1916, both their defenders and the courts continued to rely on women’s biological differences. The female body remained the focus of attention, but the rationale for protection emphasized its inferiority and moral vulnerability rather than its reproductive contribution.
Difference, under the law, warranted lower status and exclusion. As Alice Kessler-Harris charged in Out to Work, these laws reinforced an already established secondary labor market for women, institutionalizing a ceiling on their earning capacity and their ability to transcend traditional job categories. The representation of the female body and its scientific categorization in Muller served to contain the possibilities of women's work lives. Male workers, on the other hand, escaped the characterizations found in Bunting. The Bunting decision was largely ignored. Its ambiguous wording and the weakness of the law it defended denied reformers the legal precedent they needed to pursue other measures which included men.44

Similarly, this image of exposed and vulnerable workers' bodies, both male and female, lay in sharp contrast to that of these same men and, increasingly, women asserting their rights and seeking justice at the ballot box and at the bargaining table. Unionists such as Leonora O'Reilly saw the vote as a means to secure the very laws the Muller brief defended, but in a way that gave working women input and political power as wage-earners. "You cannot or will not make laws for us; we must make laws for ourselves," said O'Reilly in her 1912 testimony advocating woman suffrage. "We working women need the ballot for self-protection; we have got to have it." By supplanting this assertive image of working-class women and men with one of them as needy objects, the brief's authors not only undercut their potential for agency, but actually established their own authority at the expense of those for whom they spoke.45

Finally, the Muller and Bunting briefs reveal the dilemma of needs-based discourse in framing reform. Nancy Fraser reminds us that while needs discourse is "neither inherently emancipatory nor inherently repressive,"46 its paternalistic (and maternalistic) forms divorce needs from rights, and deprive its objects, its clients of agency and voice. Needs discourse based on the science of sex difference depersonalized its objects, rendered them passive and produced a type of woman and man in need of state protection.

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Notes
2. Brandeis and Goldmark, Women in Industry, Appendix p. 7. This appendix consists of the U.S. Supreme Court decision in the Muller case, Muller v. Oregon (208 U.S. 412).
3. Founded in English common law, this precept initially applied to the contract rights of farm-


9. In my definition of the science of sex difference, I rely on the models used by Thomas Laqueur and Cynthia Eagle Russert. It found women and men to be totally separate beings, as opposed to what Laqueur termed the “one-sex model” of the eighteenth century and earlier, which regarded women as like men, but as inferior. Laqueur found that the two-sex model was influenced less by physical evidence than by social and cultural assumptions. It emerged at the same time as the notion of separate spheres. For Russert, the two-sex model served to illustrate the differential consequences of putting undue strain on the body or “human engine.” Victorian-era scientists cautioned that women who taxed their bodies physically and mentally risked damage to their reproductive systems in particular, and ultimately to the “race.”


11. This strategy was not an uncommon one. The desire to construct a “type” and to enlist it in
the service of social reform was initiated through the use of photographs in the late nineteenth century. Alphonse Bertillon in Paris and Francis Galton created archives of photographs in order to identify the physical characteristics of criminal types, the mentally ill and other categories of people who posed a threat to the social order. In particular, Galton merged a number of photographic portraits in order to create a composite average man or woman. Lewis Hine later used this technique to "trace the general effects of factory working conditions on young bodies." Allan Sekula, "The Body and the Archive," *October* 36 (Winter 1986), 1-64, 53.

12. For a discussion of the dynamics of such a shift from rights talk to needs talk, see Nancy Fraser, "Struggle Over Needs: Outline of a Socialist-Feminist Critical Theory of Late-Capitalist Political Culture," in *Women, the State, and Welfare*, ed. Linda Gordon (Madison: University of Wisconsin, 1990): 199-225. Foucault spoke of uses of the body and the knowledge derived from it as the construction of a "political anatomy....The human body was entering a machinery of power that explores it, breaks it down and rearranges it. A 'political anatomy', which was also a 'mechanics of power', was being born; it defined how one may have a hold over others' bodies, not only so that they may do as one wishes, but so that they may operate as one wishes, with the techniques, the speed and the efficiency that one determines." This speaks very directly to the molding of "docile bodies" in the workforce, and the intent of scientific management. However, this scenario also applies to envisioning working-class people as requiring legal protection and defining them as the objects of reform. Michel Foucault, *Discipline and Punish* (New York: Vintage Books, 1979), 138. Daniel Rodgers maintains that what characterized Progressive-era reformers was not an essential ideology or single coherent political agenda, but their use of "three distinct social languages to articulate their discontents and social visions." He labelled those languages "the rhetoric of antimonopolism,...(one of) social bonds...and the language of social efficiency." This third language, "the one we associate with....rationalization and social engineering,...the stripped down language of social science," typifies the language employed in the texts of the Muller and Bunting briefs; one which helped to construct a needs-based discourse of social reform. Daniel T. Rodgers, "In Search of Progressivism," *Reviews in American History* 10 (December 1982): 123, 126.


16. For instance, lead was commonly used in the paint and enamel industry, while phosphorus was an element central to the match industry. Women labored in trades in these industries and others which commonly employed these substances. See Alice Hamilton, *Exploring the Dangerous Trades* (Boston: Northeastern University Press, 1985); Schor, *Alice Hamilton: A Life in Letters*, 153-84.


29. Brandeis and Goldmark, *Case for the Shorter Work Day*, 293-309. According to Bruno Latour, instruments function not only to produce information but, through their inscriptions, to speak for nature. Thus, just as the authors presumed to speak for the objects of reform, so did instruments support their case by revealing essential truths, or the nature of human bodies. For a discussion on the function of scientific instruments and inscriptions in the production of fact, see Latour, *Science in Action*, 64-70.


33. Brandeis and Goldmark, *Women in Industry*, 53-4. Historian Alfred DuPont Chandler, Jr. tendered a similar representation of workers as just another interchangeable part of the industrial infrastructure. While management assumed a similar role, the managers in Chandler’s narrative had faces. “As the new mass production industries became capital-intensive and management-intensive, the resulting increase in fixed costs and the desire to keep their machinery or workers and managerial staff fully employed created pressures on the owners and managers to control their supplies of raw and semifinished materials and to take over their own marketing and distribution.” Managers coordinated workers, materials, and machines. Alfred D. Chandler, Jr., *The Visible Hand* (Cambridge: Harvard University Press, 1977), 282. See also David Montgomery on the rise of the industrial “operative” (who he identified as increasingly female) and his work on the decline of the craft tradition in the metal trades. Montgomery, *Fall of the House of Labor*, 112-170; David Montgomery, *Workers’ Control in America* (New York, 1979).


43. The notion of dissected bodies presented as evidence calls to mind Laqueur’s comments on the uses of “dramatically opened, exposed bod(ies)” as an act of certifying reality. This naturalistic display of anatomy in Renaissance texts reinforced “the authority of seeing.” The vividness of the evidence’s exhibition converted text into experience and the evidence into an act of virtual witnessing. The inscriptions of instruments which measured muscle activity created the same effect; a visual display of this activity and a virtual witnessing of nature as a form of proof. Laqueur, *Making Sex*, 70-79; Latour, *Science in Action*, 64-70.

44. Alice Kessler-Harris, *Out To Work* (New York and Oxford: Oxford University Press, 1982), 212-14; Theda Skocpol and Gretchen Ritter, “Gender and the Origins of Modern Social Poli-

45. Leonora O'Reilly, "A Labor Organizer Speaks Out for Suffrage," in Modern American Women: A Documentary History, ed. Susan Ware, (Belmont, CA: Wadsworth Publishing Co., 1989), 143. Robyn Muncy relates a similar phenomenon in her chapter on the Sheppard-Towner Act. Not only did female professionals advance at the expense of their clients, but they also "demoted" their peers in voluntary organizations to a subsidiary role in reform. Robyn Muncy, Creating a Female Dominion (New York and Oxford: Oxford University Press, 1991), 93-123. Also, for an interesting comparison, see Nancy Schrom Dye, As Equals and As Sisters: Feminism, The Labor Movement, and the Women's Trade Union League of New York (Columbia: University of Missouri, 1980), 140-61. Dye charts the transition of the NYWTUL from its "ideological orientation (emphasizing) women as workers to be integrated into the labor movement to one on women workers as women, with special needs, disadvantages, and weaknesses." She identifies this shift as precipitated by the WTUL's "members' frustration with organized labor." Thus for women unionists and pro-labor reformers, this position was one of retreat and expediency.

46. Fraser, "Struggle Over Needs," 221.

References

Primary sources


Secondary sources


Frasier, Nancy. "Struggle Over Needs: Outline of a Socialist-Feminist Critical Theory of Late-


