

Occupational Classes, Information Technologies, and the Wage

Ronald E. Day

Indiana University at Bloomington, Department of Information and Library Science,
Luddy School of Informatics, Computing, and Engineering, 700 N. Woodlawn Avenue, Bloomington, IN 47408,
<roday@indiana.edu>



Ronald E. Day is a professor in the Department of Information and Library Science at Indiana University at Bloomington. He is the author of several books and many articles.

Day, Ronald E. 2020. "Occupational Classes, Information Technologies and the Wage." *Knowledge Organization* 47(5): 404-409. 17 references. DOI:10.5771/0943-7444-2020-5-404.

Abstract: Occupational classifications mix epistemic and social notions of class in interesting ways that show not only the descriptive but also the prescriptive uses of documentality. In this paper, I would like to discuss how occupational classes have shifted from being *a priori* to being *a posteriori* documentary devices for both describing and prescribing labor. Post-coordinate indexing and algorithmic documentary systems must be viewed within post-Fordist constructions of identity and capitalism's construction of social sense by the wage if we are to have a better

understanding of digital labor. In post-Fordist environments, documentation and its information technologies are not simply descriptive tools but are at the center of struggles of capital's prescription and direction of labor. Just like earlier documentary devices but even more prescriptively and socially internalized, information technology is not just a tool for users but rather is a device in the construction of such users and what they use (and are used by) at the level of their very being.

Received: 11 July 2020; Revised: 10 August 2020; Accepted: 12 August 2020

Keywords: labor, work, occupational classes, social classes

1.0 Occupational classification genres and their discontents

Perhaps it would be best to start by enumerating several different forms or genres that occupational classes have taken in modernity: genealogical (a person's occupation is what their parents' were and what their family is known for—this has largely disappeared); fixed structural (occupational class identity is that of an identity within a table of differences—the structure given to occupations on census forms); dynamically structural (occupations are part of social classes, which are the result of ownership and one's place in the economy of production); and transient (those who are not identified as having a dominant occupational title, but instead do part-time, low-waged, or non-waged work, which does not neatly fit within formal occupational classes or fits within such by supplementary manners).

I will not discuss genealogical occupational classes, but rather I will start with what I am calling "fixed structural" classes, since this is the beginning of accounting for labor

occupations within a wage system. We are concerned not just with distinctly different classes of occupations, but also occupations themselves as a class. Both of these notions have conceptual and practical problems in census forms.

For example, as Michael Katz (1972) argued, the sociological study of occupational classes is the study of two different phenomena: class structure and individual social mobility. While census and other tabular forms address the former, they do a poor job of addressing the latter. As we will discuss, class mobility, multiple occupational roles, and other such existential factors are poorly represented by means of *a priori* classes.

The conceptual and practical difficulties of describing labor markets by distinct, *a priori*, occupational classes and tabular data seems to have become apparent since their beginnings in modern census gathering. For example, instructions to U.S. census marshals for the 1820 census acknowledged that it may be difficult to classify persons only by the categories of agriculture, commerce, or manufacturing, but that marshals must do their best to do so ("The discrimina-

tion between persons engaged in agriculture, commerce, and manufactures, will not be without its difficulties" (U.S. Census, 1820)). Similarly, the 1850 U.S. census recorded occupational data at sites of transient work, such as ports and ships, where workers could themselves be transient, but again urging that marshals only report one role as being a person's chief occupation. And while exactness in imposing one chief occupational class upon a laborer was always demanded of these marshals, as the census evolved the descriptions also had to become more specific or particular as well. Instead of being simply a factory hand, a worker had to be described by what factory he or she was a hand in. Instead of "jeweler" for one who makes watches, the laborer had to be described as a watch maker or watch chain maker. Also, other attributes of life recorded in census forms, such as medical, came to impinge upon the purity of the category of "occupation." So, for example, in the 1850 census, there is Heading 13, which includes "Deaf and dumb, blind, insane, or idiotic" for slaves, bringing together physical and mental illnesses and slavery (U.S. Census 1850). As we see, occupational classes not only have problematic divisions between occupations, but also the very class of an "occupational class" is problematic.

What I call above "dynamically structural" accounts, such Karl Marx's theory of social classes, attempt to account for occupational classes through social classes that are organized within a dominant political economy (for Marx, capitalism). Occupational classes are important within an economically determined politics, because they describe the current and possibly future specific means of production and ownership. Occupations in modern political economies are not generally part of a "God-given" social order, but rather they describe and predict the social order in the present and to come through documentary, evidential, means. What the empiricism of such forms in modernity may mask, however, is the logic that they serve. For example, modern occupational classifications not only describe but predict and also prescribe the classes of labor within capitalism, that is, the classes of what are considered to be wage determined work. While other, non-waged, occupations might be included, these are supplementary categories, whose epistemic as well as practical value for accounting for waged occupations is largely covered up in any one particular census, requiring historical comparison and historical contexts for viewing differences between labor and work in census activities.

2.0 Women's labor as an example of the instability of "occupational class"

Historically, women's labor has been difficult to categorize in modern censuses in many countries (Katz 1972; Jones 1987). It has also been inadequately accounted for in even

classical works of political economy, such as Marx's writings (Fortunati 1981; 1995).

During modernity, the presence of a wage has played a very important role in determining if work is labor or not, and thus, more solidly an occupation rather than not (As we have seen, however, this norm has been violated in the case of slavery and, as we will soon discuss, with household labor). As Jones (1987) has explained, as was the case with Dr. William Farr's (best known for his work on epidemiological statistics) appendix contribution to the United Kingdom's census of 1861, society is generally viewed in capitalist economies as being divided into two broad classes, those who produce and those who are unproductive. The difference is not due to work, *per se*, but rather due to labor and production being understood by the worker's "exchange value" (Jones 1987, 61) of their work for a wage. "Occupations" thus most properly appear with waged labor, rather than with non-waged work, and they appear mostly with waged work within conditions of stability and continuity in tasks performed, and not precarity, part-time, or piecework.

Even when non-waged occupations appear in censuses, the wage plays a role in dividing categories for the same performed work. For example, the absence or presence of the wage creates the distinction between housewife and house-keeper in earlier censuses, even when the two categories involve the same work. Historically, women's wages more often than men's wages have been indirect (e.g., through a husband's paid labor, for example), and/or earned part-time and/or by piecework, home-based, labor. The labor of women is even more difficult to account for if we include wages deferred until another generation, such as in the case of raising children who then earn a wage as teenagers or adults and take care of the parents and others, or the role of a woman as caregiver to elderly relatives. In early industrial periods, women are also often the "managers" of generations of present (not just future) at-home workers in the family, such as their children and their retired or "retired" parents, who may do piecework. Each of these cases challenge the notion of a woman having a single occupation or even an occupation at all. The accounting difficulties have to do with the multiple sites of labor for some women, how work and labor (i.e., waged work) are sometimes intertwined at the same sites and times, intertwined with multiple labor and work duties and roles, and by the presence of direct and indirect wages. Also, of paramount importance as I will soon examine, are women's necessary and traditional roles in biological, cultural, and social reproduction.

Women's labor is important to examine not only in its own right, but because it points to the un- or poorly accounted for work that lies outside of—but also in capitalism is central to—maintaining not only the fact, but the category of, occupational waged labor and the wage and its' social divisions, as well. If we do not account for non-waged

or partly waged work and the indirect wage, we will then have a very poor account of labor and of occupational activities and thus occupational classes. As I will argue, both theoretically and practically “occupational class” depends upon these transient epistemic and social classes of labor, even if it does so by exclusion or by their marginality within occupational classifications.

In terms of worksites, farm life provides a good example of the difficulties of classifying women’s work according to traditional occupational labor classifications. The role of what was called “the farmer’s wife” is difficult to classify. Is the job that of only being the wife of the farmer? Is this a professional occupation? Is it to include the work of child raising, the work of their education, the work of getting her husband up, the work of milking the cows and tending the hens and keeping account of finances? In addition, at the farm there is no going off to work, for work is largely done at home. The lines between waged and unwaged work blur here considerably, but without this work, there would be no wage possible, and so, no income for the family.

As I have mentioned, home piecework, too, is prevalent at the beginning of industrial periods and was often done and managed by women and their extended family or families (children and the elderly) (As we will later discuss, it has returned in the mode of digital labor). In early industrial periods, this work provided parts and provisions for factory centers and allowed women to tend to children at home.

Leopoldina Fortunati’s now classic book, *The Arcane of Reproduction* (*L’arcano della riproduzione* 1981), investigated the problem or “mystery” (*l’arcano*) of women’s labor within the traditional male dominated wage in families in Italy at the time of its publication and earlier. Fortunati’s book, as other like works from feminist workerism, still has great value in so far as its central themes of non-waged “domestic work,” “housework,” and “reproduction” (which includes the raising of children, their education, and in sum all their biological, cultural, and social reproduction, as well as the maintenance of the family unit) remain as relevant, if not more relevant, today.

Fortunati’s book followed Selma James’ vanguard Wages for Housework campaign in the US and Canada, now taken to the Veneto region of Italy during the 1970s, which centrally inserted women’s unwaged “domestic” work into the previous male dominated struggles of Italian labor (such as *Potere Operaio*), rather than simply advocating for the abandonment of the home as a site for women’s labor struggles in the mode of much second wave feminism during this time (James in 1972 coauthored with the Italian feminist Mariarosa Dalla Costa, *The Power of Women and the Subversion of the Community*), which was later seen as a founding text for the movement). The Wages for Housework campaign in Italy shared with emerging Italian autonomist struggles is a critique of contemporary society as being a so-

cial factory for capitalism. It extended Marx’s analysis of political economy and social classes in the direction of the family and affective labor. As Steve Wright puts it (2020), writing about *The Power of Women and the Subversion of Community*, “If in *Operai e capitale*, [Italian workerist theorist Mario] Tronti had put labour at the centre of the capitalist universe, Dalla Costa dethroned labour in turn in favour of ‘the housewife.’ By doing so, she lent substance to a new dimension of class composition analysis, addressing the labor of the unwaged.” This latter point is at the heart of our analysis of occupational classes.

There are several germane points that we can extrapolate from Italian feminist workerism in regard to women’s work and occupational classes. First, Fortunati’s (1981) book not only discusses women’s reproductive work (“domestic labor”) as mediated by men’s wage, but it also discusses women working for a wage alongside of this, and in part-time and non-waged work in the home and elsewhere, as well. Traditional accounts of occupational class can fail to account for this work/labor and additional work/labors of individual women. But second, they not only hide the additional labor of individual women but obscure the role of women within the normative logic and discourse of waged “productive” labor and non-waged reproductive labor, and, in this, they also dissolve the power of women as a class. Third, “women’s labor” and “women’s work” is a heuristic for not necessarily sexualized, but certainly gendered, class assignment, which is based on scales of pay (or the lack of pay), and not only the economic but the social values attached to these scales (For example, women from the upper classes can hire other women to do their work, and conversely, men can be traditionally low paid “care professionals,” thus allowing women to be part of the patriarchy and men to be part of an exploited class of “women’s work” or labor). Fourth, we see from this that what occupational classes presume are not only sexualized but gendered relations of wage labor to low and unpaid work, and this results in series of divisions and hierarchies even among these classes.

“Occupation,” as itself not only being a logical, but a social class, depends not just in theory, but in practice, upon the non-waged work of biological-social-cultural reproduction. For this reason, “women’s labor” and “women’s work” has always proved problematic in, and for, occupational accounting.

The point here is not just to theoretically contest “occupation” as a category that has excluded women. The bigger issue is that of the exclusion of reproduction as the central issue of production more generally, and thus that of engaging in a critique of value toward reclaiming the centrality of these non or low paid work activities of reproduction within the productive maintenance and well-being of both human society and nature. A concern with “women’s work” in reproduction is not just a marginal or supplemen-

tary concern for production but the central concern of all life, of all production. Mariarosa Dalla Costa pointed out the relation of the Italian feminist struggles to this larger picture in an interview with Louise Toupin in 2013 (Toupin 2018, 222):

We discovered the home beside the factory. We discovered that the class was formed not only of waged workers but also of non-waged workers.

Today, taking this into account is fundamental to understanding the ‘capitalist command,’ which from the world of production, is deployed in forms that are ever more ‘strangling’ and lethal in the world of reproduction. It is also fundamental to understanding the relationship between the formal and the informal economy, the relationship between the monetary and non-monetary economy, and the relationship between the first world and the third world (to use a conventional shorthand). Also, to understand the struggles that, arising from the world of global reproduction, tend to break this command, and to affirm other criteria in the relationship with production, with nature, and with life.

3.0 Transient occupations

“Women’s labor” shows us several elements of what I will call the epistemic-social class of “transient” labor, which challenge both fixed and dynamic structural accounts of occupational classes. As I have suggested above, it is the appropriation and ex-appropriation of work to and from waged labor that underlies the traditional notion of occupation. Classes of occupation and the class of occupation itself depends on the concept and fact of the wage as a distinguishing mark between valued and under or unvalued work. Transient labor is labor whose very description poses a problem to setting occupational class boundaries.

I borrow the notion of “transient occupations” from the French philosopher, Chantal Jaquet (2014), who has discussed economic “transclasses” in terms of social “non-reproduction,” in the sense of traditional social classes not being reproduced through individuals’ movements between them. Jaquet refers to migrants and people changing class structures, but I here expand her notion of the “transclass” to work that transcends not just social classes and their reproduction but epistemic notions of occupational classes. It is not only the a priori nature but the conceptual and social boundedness of traditional notions of occupational class that need to be critically examined through the concept of transclass.

Further, in my account here, social reproduction depends upon the transclasses as the surplus value that under-

lies and allows for occupational values. As I will show in this section, today this very surplus value has now been (under)valorized as being at the heart of the “new economy.” As I will argue, this flexibility in capital-labor relationships is embedded in the very documentary forms of occupational classes in capitalism. The flexibility is both shown and prescribed through mediating human resource information technologies, which advertise and hire through skill and task-based descriptions rather than through traditional occupational ontologies. Such descriptive keywords are indexed to the highly temporal and piecework needs of corporations and changing marketplaces of post-Fordism. Such a “post-coordinate” shift in occupational nomenclature is not only descriptive but prescriptive for labor and lies at the heart of the post-Fordist, digital, labor revolution, which is best characterized by temporary and precarious labor and its wage.

One speaks of the “precariously” employed or “part-time” and “adjunct” labor, which today can take the form of a digitally mediated, piecework “gig economy.” Such labor is constituted by the needs of workers to contort not only their lives but also their identities in two manners: first, skills demonstration and occupational identity, and second, flexibility in terms of availability and the amount and conditions (e.g., benefits, hours, etc.) of a wage that they are being paid.

As to this first, in her book *Down and Out in the New Economy*, Ilana Gershon (2017) has discussed precarious labor in the new (digitally mediated) economy, in terms of the need for prospective employees to form self-identity labels in order to get past application algorithms and fit within the individual corporate human resource unit’s advertised needs. If occupational classifications once appropriated individuals into classes of occupations, now the demand is for individuals to match their skills and experience with business specific keywords; the individual must construct themselves as keyword level documents of labor capacity. Occupational classes, just like so much of knowledge organization today, now take the form of keyword indexing and graph algorithms.

It may be difficult for individuals to match themselves to the keywords of a new employer or new cultural system. In a Lacanian manner, one needs to know the symbolic order of the other to which one is trying to fit within in order to speak their language and express one’s self. And if there is no way of knowing this, then all one is left with is trial and error or asking someone who might know. Like with all information systems, one is defined as a having a relevant need (e.g., a job qualification) based on what is available and “makes sense” in the information system (Day 2014). Whatever else one is trained in or has occupational experience with, today one must first of all be an “information professional” in order to get a job. Gershon (2017, 78-79) writes

in her anthropological study of digitally-mediated job searching and hiring:

Career transitions were not the only moments in which people had trouble representing themselves effectively in resumes or LinkedIn profiles. People also had difficult moving between countries. Some of the problems revolved around credentials—regardless of your medical training overseas, in order to be a doctor in the United States, you had to take the US Medical Licensing Examination and, depending on the state and your specialty, be a resident for at least three years. Yet the problem is not just one of credentials but also one of classification. Audrey explained to me that she has just moved back to California after working in South Korea for a number of years for a Korean company. Since moving back to the United States, she had trouble explaining her job effectively on her resume. The range of her job duties doesn't match the range ascribed to any single job in the American companies For both Susan and Peter, the problem was one of classification—companies or different professions classified the tasks belonging to a job position differently enough that one couldn't make effective comparisons.

The digital laborer in the new economy must not only adapt to information systems, but many must adapt to their own status as temporary or part-time workers in a digitally mediated workplace. The digitally mediated gig economy, like previous piecework economies, is largely unregulated by labor laws or collective bargaining. Like with previous piecework, one must be “flexible” to the needs of capital; the laborer must not only construct piece objects, but the laborer must also construct his or herself as a piece-subject, and this means being in a transitional occupational class even if this is a class that is identified within occupational ontologies. Identity must be sold as mobile assemblages of wanted capacities corresponding to system recognized keywords and graph relationships, which then can be recomposed in different and changing market conditions.

The old piecework economy, once a supplement to industrial centers has now, in digitally mediated form, been conveniently rebranded with the hip name of the “gig” economy. Mary Gray and her co-authors (Gray et. al. 2016) and Yin and Gray (2016) have discussed the “unofficial” online social support networks that workers have built in order to support their supposedly individual work mode. Gray et. al. have argued that “workers collaborate to address unmet social and technological needs posed by the crowdsourcing platform.” And Yin and Gray have suggested that well connected workers on Mechanical Turk may be able to find more lucrative work sooner than poorly connected workers.

The observation that workers use social networks among peers to gain advantage over other peers in the marketplace, echoing the way that domestic labor pieceworkers networked in early industrial eras (except now on a vastly expanded geographical scales thanks to the internet), also suggests the unmet economic needs that pit workers against one another in such economies. These unmet economic needs are those that result from a labor market that has been created by the evaporation of standard, full-time, occupational jobs, and also by a lack of labor regulation covering this new piecework economy. Hara et. al. (2018), for example, have calculated that the average Amazon Mechanical Turk worker is paid approximately two dollars an hour, once one calculates “time spent searching for tasks, working on tasks that are rejected, and working on tasks that are ultimately not submitted.” Such a worker socializes not to resist the unregulated market place but rather to compete in it just as people in industrial piecework economies used communicative networks and other social capital to compete with one another. It needs to be stressed that such socialization is not that of the deployment of workers’ social capital in resistance to exploitation but workers’ socialization in support of their mutual exploitation. Viewed collectively, this can drive the wage even lower not only because of the competition of workers with one another but because of the time necessary to socialize toward competing, as the wage must be calculated, as Hara (2017) suggests, by the overall costs of time and effort spent gaining, as well as doing, work.

In addition to studying the experiential accounts of individual workers, it is necessary to view digital labor as structural issue, including in terms of occupations. Accounting for occupational labor is no more simply empirical than it is simply descriptive. Occupational classes and work descriptions are robustly ideological and prescriptive and result in important practical outcomes, such as career choices, employment, and wages.

4.0 Conclusion

Like in most areas of the post-Fordist revolution introduced by information technologies, where workers have moved out of assigned positions in an assembly line only to be co-opted as managed “team players” and “entrepreneurs,” the form of occupational descriptors has shifted from that of being universal *a priori* classes that capture workers collectively to being particular names to which particular workers attempt to correspond in terms of their *a posteriori* experience and skills. Information technology has become embedded in not only worker identification, but self-identification, through real-time networks that also connect different labor and machine processes. Potential workers and current workers must identify themselves as nodes in changing net-

works rather than cogs in standardized factories. The digitally mediated social factory is one of algorithmic nominalization where “innovation” applies not just to object production but subject production.

What we see in the “new economy” is the appropriation of work through documentary mediation of a certain type: one based on the demand that individual social sensibilities be shaped to needed tasks within shifting systems of production. Newer documentation systems function by indexing and ranking social sensibility through analytic graphs, social graphs, and predictive learning graphs (Thomas 2018). The overall social sensibility of digital labor is precarity, celebrated by capital as freedom of employment opportunity on the one hand and corporate flexibility on the other. Post-coordinate information technologies do not just bridge these two sides, but they create their possibilities in terms of the “new economy.”

Occupational classes are being reshaped by information technologies as inclusive of more and more precarious and supplementary social classes. Professions have been transformed into sites for piecework, inside and outside the home, while the site and time of work has greatly expanded.

References

Dalla Costa, Mariarosa and Selma James. 1972. *The Power of Women and the Subversion of the Community*. Bristol: Falling Wall Press.

Day, Ronald E. 2014. *Indexing it All: The Subject in the Age of Documentation, Information, and Data*. Cambridge, MA: MIT Press.

Fortunati, Leopoldina. 1981. *L'arcano della riproduzione: Casalinghe, prostitute, operaie e capitale*. Venezia: Marsilio.

Fortunati, Leopoldina. 1995. *The Arcane of Reproduction: Housework, Prostitution, Labor and Capital*, trans. Hilary Creek. Brooklyn: Automedia. Translation of *L'arcano della riproduzione*.

Gershon, Ilana. 2017. *Down and Out in the New Economy*. Chicago: University of Chicago Press.

Gray, Mary L., Siddharth Suri, Syed Shoaib Ali and Deepti Kulkarni. 2016. “The Crowd is a Collaborative Network.” In *CSCW '16: Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*. New York: ACM, 134-47. doi: 10.1145/2818048.2819942

Gray, Mary. L. and Siddharth Suri. 2019. *Ghost work: How to Stop Silicon Valley From Building a New Global Underclass*. NY: Houghton Mifflin Harcourt.

Hara, Kotaro, Abigail Adams, Kristy Miland, Saiph Savage, Chris Callison-Burch and Jeffrey P. Bigham. 2018. “A Data-driven Analysis of Workers’ Earnings on Amazon Mechanical Turk.” In *CHI '18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. New York: ACM. doi: 10.1145/3173574.3174023

Jaquet, Chantal. 2014. *Les transclasses or la non-reproduction*. Paris: PUF.

Jones, F. L. 1987. “Occupational Statistics Revisited: The Female Labour Force in Early British and Australian Censuses.” *Australian Economic History Review* 27 no. 2: 56-76.

Katz, Michael B. 1972. “Occupational Classification in History.” *The Journal of Interdisciplinary History* 3 no. 1: 63-88.

Thomas, Neal. 2018. *Becoming-Social in a Networked Age*. NY: Routledge.

Toupin, Louis. 2018. *Wages for Housework: A History of an International Feminist Movement, 1972-1977*, trans. Käthe Roth. Vancouver: UBC Press, Pluto Press. Translation of *Salaire au travail ménager*.

U.S. Census Bureau. 2002. “Measuring America: The Decennial Censuses from 1790 to 2000.” <https://www.census.gov/prod/2002pubs/pol02marv.pdf>.

U.S. Census Bureau. 2016. “1820 Census Instructions to Enumerators.” <https://www.census.gov/programs-surveys/decennial-census/technical-documentation/questionnaires/1820/1820-instructions.html>

U.S. Census Bureau. 2017. “1850 Census Instructions to Enumerators.” <https://www.census.gov/programs-surveys/decennial-census/technical-documentation/questionnaires/1820/1820-instructions.html>

Wright, Steve. Forthcoming 2020. *The Weight of the Printed Word: Text, Context and Militancy in Operaismo*. Leiden: Brill.

Yin, Ming and Mary L. Gray. 2016. “The Communication Network Within the Crowd.” In *WWW '16: Proceedings of the 25th International Conference on World Wide Web*. Geneva: International World Wide Web Conferences Steering Committee, 1293-1303. doi:10.1145/2872427.2883036