

AN INVESTIGATION OF GENDER DISCRIMINATION IN LABOR HIRING

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INTRODUCTION

In his Presidential Address to the American Economic Association in 1970, Wassily Leontief lamented the lack of a tradition of direct data generation in economics. He also criticized the excessive reliance by economists on indirect statistical inference.

Devising a new statistical procedure, however tenuous, that makes it possible to squeeze out one more unknown parameter from a given set of data is judged a greater scientific achievement than the successful search for additional information that would permit us to measure the magnitude of the same parameter in a less ingenious, but more reliable way [Leontief, 1971, 3].

More recently Morgan [1988] documented that economists were less likely to engage in direct data collection than other social scientists. Morgan calculated that during the 1982 to 1986 period, 10 percent of the articles in the *American Political Science Review* and 23 percent of articles in the *American Sociological Review* were based on data generated by the author. The equivalent figure for the *American Economic Review* was only 5 percent. Similarly, economists' inordinate reliance on the application of regression analysis to published data of uncertain quality, in preference to the time-consuming task of constructing their own data sets, was a recurring theme in the special centennial survey issue of the *Economic Journal* published in March 1991.

In analyzing labor market discrimination this penchant for published data and regression analysis involves the inference of discrimination from differences in the labor market outcomes of the sexes, or the races, which cannot be attributed to productivity-determining variables, such as education and experience. "In crude terms, for economists evidence of discrimination merely requires the presence of 'unexplained' differences in compensation or employment" [Ashenfelter and Oaxaca, 1987, 323]. This approach has led to an emphasis on supply-side variables to explain occupational segregation and lower pay for women. The supply-side orientation of the regression technique was demonstrated by Gunderson [1989] in an extensive review of statistical studies of male-female wage differentials. He listed the following indepen-

dent variables common to regression equations "... education, race, training, labor market experience or its proxy, seniority with a particular employer, marital status, health, hours of work, city size, region, quality of school, absenteeism and number of children" [1989, 51].

This regression approach to establishing labor market discrimination has been challenged because of its specification problems: "In the light of such sensitivity of the magnitude of discrimination to plausible alternative specifications of the underlying regression equations, and the fact that neither productivity nor discrimination itself is directly observable, some skepticism has arisen about the adequacy of this technique for measuring discrimination" [Blau and Ferber, 1987, 318]. "Discrimination can, after all, take many forms besides gender-based wage differentials, and seems unlikely to be completely captured by so crude a measure as a log-earnings regression" [Kuhn, 1990, 297].

An alternative approach to studying the extent of labor market discrimination is to investigate the demand-side directly, by conducting a controlled field experiment in which the role of gender, or race, as a screening criterion is isolated. This involves collecting data on labor-hiring behavior directly by posing as a labor market supplier. Such an approach lacks the technical ingenuity of the econometric studies, which attempt to infer the existence of discrimination from published supply-side data. On the other hand, a carefully constructed, controlled experiment can provide unequivocal evidence of the extent of discriminatory activity. Several such field experiments have been conducted to investigate the extent of racial discrimination in labor hiring. In a recent report for the International Labor Office, Bovenkerk [1992] summarizes the experiments on racial discrimination which have been undertaken in Australia, Canada, England, France, the Netherlands, and the USA.

We have applied this experimental approach to investigate the extent to which gender *per se* is a factor in the decision-making process of employers. We adopted the procedure of correspondence-testing, which was first developed by Jowell and Prescott-Clarke [1970]. This involves sending carefully matched pairs of written job applications in response to advertised vacancies, in order to determine whether race, gender, age, etc. is a factor in the decision to select someone for a job interview. We conducted our experiment in the Australian State of Victoria during a three-year period from November 1983 to November 1986.

The Australian Federal Government had ratified Convention III (concerning equality of opportunity of employment) of the International Labor Office in 1973. The State of Victoria passed legislation in 1977 which made it unlawful to discriminate on the basis of gender when hiring labor, and established an Equal Opportunity Board to oversee the legislation and to react to complaints. The Australian Federal Government enacted complementary legislation in 1984.

THE EXPERIMENT

Correspondence Testing

Two standard letters of application were sent in response to job advertisements. In order to avoid detection the two letters obviously could not be identical, but in all

essential aspects (such as age, qualifications, and experience) the applications were carefully matched, so that the only effective distinguishing characteristic was gender. To control for the possibility that the style of a particular letter might influence employer response, letter-types were allocated equally between the sexes. Thus, if one hundred applications were made, on fifty occasions the female would be allocated letter A and the male letter B. On the other fifty occasions this would be reversed, and the male would use letter A while the female would use letter B.

If both male and female were invited to a job interview, this was interpreted as a case of no discrimination or equal treatment. If only one applicant was invited to interview this was treated as a case of discrimination. Where neither applicant was invited to an interview this was treated as a non-observation, since it tells us nothing about an employer's use of gender as a screening device. Instead, it may simply indicate that a short-list was determined before our applications arrived, or that several other superior applications were received, or that the employer was not prepared to short-list any applicants who had not included a contact telephone number. In these cases, the employer's penchant for discriminating on the basis of gender would have been put to the test only if our applications had arrived earlier, contained qualifications and experience of a different nature, or included contact telephone numbers.

There are many advantages of correspondence testing. It is possible to exercise precise control over the content of applications. It is possible to ensure that all relevant characteristics other than gender are carefully matched, and by reversing letter type, correspondence testing controls for any unintended bias introduced by any stylistic differences. Finally, with correspondence testing it is possible to demonstrate the controlled and objective nature of this procedure. The disadvantage of this technique is that it only tests for discrimination in hiring at the initial stage of selection for interview. Some employers may delay their discriminatory activity until the interview or until a final choice is made from all the interviewed candidates. Thus correspondence testing does not measure the full extent of discrimination in the hiring decision; but it does highlight one quite decisive form of discrimination — that of denying an applicant the chance to compete for a job.

The Occupations

The occupations chosen for the study were those for which written applications were usually required, and for which advertised vacancies arose at a steady rate. We eschewed occupations in which licensing or legal registration is required. Unfortunately, there was only one manual occupation with a regular flow of vacancies that usually requested a written application.

The occupations chosen were computer analyst-programmer, computer operator, computer programmer, gardener, industrial relations officer, management accountant, and payroll clerk. Computer analyst-programmer and computer programmer are clearly distinguished in newspaper advertisements, both in designation of title and in job content. It was, therefore, the newspaper specification which determined our classification of these two occupations. Table 1 presents the gender distribution of the labor force in five of the occupations contained in this study.

TABLE 1
Female Representation in the Victorian Labor Force, 1981

Occupation	Percent
Accountant/Auditors	9.3
Computer Programmer	22.6
Gardeners/Nurseryworkers/Groundsmen	12.6
Non-government Clerical Workers	67.8

Source: Australian Bureau of Statistics [1981].

The classification computer programmer includes also analyst-programmer. Paymaster is included within the classification — "non-government clerical workers, n.e.c." Two of our occupations — computer operator and industrial relations officer — were not classified separately, as such, in the census.

The sole source of job advertisements was *The Age*, a daily newspaper with a very large Saturday classified advertisement section, typically carrying 30,000 job advertisements. All vacancies in the seven occupations advertised in *The Age* were applied for, unless a telephone application or personal attendance was specified, or unless the vacancy was being handled by a personnel recruitment agency. We also excluded a vacancy from our study if we had previously made an application for that occupation to the same employer. In addition, we placed a limit of two applications in total for any employer. This was to reduce the risk of detection and to minimize any inconvenience to employers.

The Letters

Two standard letters were devised for each occupation. In these letters the marital status of the two applicants was always identical and their age varied by one year. The level of qualification and the extent of work experience were carefully matched but, to avoid detection, names of educational institutions and employers were eschewed. Instead general statements were made such as "I am a fully-qualified accountant with a university degree", "I am an economics graduate with major studies in industrial relations and labor economics", "Currently I am working for a large retailer but I have also worked for a firm in the plastics industry and for a medium-sized home-builder", "I spent four years with a municipal council. More recently I have been working for a golf club." Effectively, the applicants were identical in all aspects except for their gender which was identified by the name given the applicant, and in the case of the female by the title Miss or Mrs. For each of the occupations, two standard names were devised and used throughout the study. Standardized letters were held on word processor disks, and each week all that was necessary was to fill in the names of advertisers, dates of advertisements, applicant names, and the marital status of the male to match that of the female. Four Melbourne addresses were used for the applicants, in comparable socio-economic areas of the city. Applications were

always posted simultaneously in the same mail box to ensure that they would arrive at the advertiser's address on the same day, and always within a week of the advertisement first appearing.

When an invitation for a job interview was received by letter or telephone, a telephone call was made early the following day declining the invitation, to minimize any inconvenience to the employer. Correspondence testing imposes a cost on the employer in a manner which is not infrequent in the labor market, as participants carry out the process of search and acquisition of bargaining chips to negotiate with current and prospective employers. The justification for this minor act of deception is that it is the only effective way of discovering how employers actually do behave in practice, as distinct from how they might claim to behave when questioned about their employment practices. The distinction between actual and claimed behavior was dramatically demonstrated sixty years ago by La Piere [1934]. In an extensive trip through the USA with a Chinese couple, admittance was gained to all except one of 251 hotels and restaurants, whereas, in response to questionnaires sent six months later to the same establishments, over 90 percent replied that they would *not* accept Chinese guests. Employer replies have been kept strictly confidential to the authors of this paper.

The Results

The Aggregate. The results of the correspondence testing are set out in Table 2. Column 4 shows the number of occasions on which one or both applicants received an invitation to interview. This number is divided into three categories: both invited to interview (column 5), only the male invited to interview (column 6), and only the female invited to interview (column 7). Columns 8 and 9 record the distribution of letter-type on occasions of discrimination. For example, in management accounting there were twenty-eight occasions of discrimination and on fifteen occasions the sender of letter A was preferred, while on the other thirteen occasions the sender of B was preferred. In the vast majority of cases where neither, or only one, applicant was invited for interview, letters of rejection were received. In a small minority of cases, however, no reply was received. Therefore columns 3, 6 and 7 include "failure to reply" as well as "formal rejections."

We define discrimination as "differential treatment" of applicants. In almost all cases this involved the invitation to interview one applicant, with the other rejected; but occasionally it involved a difference in the timing of an invitation to interview. Where there was a delay in issuing an invitation to one of the applicants, it was interpreted to be a case in which one applicant had been ranked lower in the short-listing process and received a second-round offer of an interview after the withdrawal of a candidate or candidates from the first round. If an invitation to one of our applicants was clearly issued subsequent to the withdrawal of our other applicant, or where the letters or telegrams requesting attendance at an interview were dated two or more days apart, the case was classified as one of differential treatment. Columns 6 and 7 include all cases of differential treatment.

TABLE 2
Results of Correspondence Testing

1	2	3	4	5	6	7	8	9	10
Occupation	Applications	Invitation(s) Neither Invited	Issued (i.e., 2-3)	Equal Treatment	Discrimination against Female	Discrimination against Male	Letter-Type Only A	Letter-Type Only B	χ^2
Computer Analyst-Prog. Percent	152	59	98 100	70 75.3	17 18.3	6 6.4	14	9	6.00
Computer Operator Percent	99	50	49 100	35 71.4	8 16.3	6 12.3	9	5	.33
Computer Programmer Percent	115	44	71 100	53 74.6	7 9.9	11 15.5	7	11	1.12
Gardener Percent	148	86	62 100	42 67.7	15 24.2	5 8.1	10	10	5.96
Industrial Relations Offic. Percent	94	56	38 100	26 68.4	5 13.2	7 18.4	6	6	.4
Management Accountant Percent	211	103	108 100	80 74.1	18 16.7	10 9.2	15	13	2.63
Payroll Clerk Percent	172	86	86 100	57 67.0	14 16.5	15 16.5	18	11	.04
TOTAL Percent	991	484	507 100	363 71.6	84 16.6	60 11.8			4.66

One or both applicants were invited for interviews on 507 occasions, and 144, or 28.4 percent of these occasions, involved differential treatment. Female applicants encountered discrimination 40 percent more frequently than male applicants. Females were discriminated against on 16.6 percent of our occasions while the male rate was 11.8 percent. To determine whether there is a significant association between gender and discrimination in applying for employment in this group of occupations, we applied a chi-square test to these results. Calculated chi-square values are given in column 10. When the results for the 7 occupations are combined a value of 4.66 is obtained. Where there is one degree of freedom the critical value of χ^2 at the 0.5 level of significance is 3.84. Therefore the probability is less than 5 percent that the result is the outcome of chance, and the null hypothesis — that there is no association between gender and invitation to job interview — is rejected. This aggregate result, of course, was very much related to the group of occupations to which we were constrained by our experimental technique of correspondence testing. For instance, the aggregate result might have been quite different if we had been able to include a greater range of manual occupations in our experiment. Therefore, much more meaning attaches to the results for individual occupations, to which we now turn.

Individual Occupations. There was a considerable degree of variation in the results obtained among occupations. In three occupations — computer operator, industrial relations officer and payroll clerk — cases of discrimination were allocated almost equally between sexes. In two occupations — computer programmer and management accountant — cases of discrimination were not distributed equally between the sexes, but the chi-square result is not significant at the 0.5 level and the null hypothesis cannot be rejected. In the remaining two occupations — computer analyst programmer and gardener — the chi-square value is significant at the .05 level, in which case the null hypothesis is rejected.

Nevertheless, the occupations in which discrimination was allocated equally between the sexes had a substantial rate of gross discrimination; in the case of payroll clerk, one in three of the occasions where employers responded positively involved an invitation to only one of the two applicants. As our letters were closely-matched, this provides some insight into the efficiency with which the labor market selection process operates. One explanation for this finding of gross discrimination may be that the people charged with selecting applicants for interview exercised a conscious gender preference, but these preferences fell into two roughly equal camps. While some firms discriminate against women, at other firms the activities of equal opportunity officers and affirmative action policies aimed at getting women onto interview shortlists could have been responsible for some of the apparent discrimination against males. Alternatively, this gross discrimination may just reflect a high degree of randomness in the process of selection for job interviews. Our letters should always have arrived in the same post; therefore, if gender was not the reason for the differential treatment of applicants, it must have been a haphazard factor, such as the order in which applications were opened.

The results in gardening and computer analyst-programmer are quite similar. In both cases the calculated chi-square value is significant at the .02 level. It is worth

re-emphasizing the point made previously — correspondence testing does not capture the full extent of the discrimination which may occur in labor-hiring. What it does capture, though, is discrimination of an especially decisive and absolute form. It demonstrates that some applicants are denied the opportunity to present themselves in a competitive fashion before an interview panel because they are screened out at the very outset of the hiring process on the basis of their gender.

What explanation can be advanced for these two occupations having produced a result which is statistically significant, while the other five occupations did not?

Gardener. Two characteristics distinguish gardening from the other occupations in our study. First, it is the only manual occupation we were able to include; and second, it is the one case in which several non-metropolitan job vacancies were involved. When the data for gardening were classified into metropolitan and non-metropolitan categories, a 22.4 percent rate of discrimination against females in the metropolitan area was calculated, in comparison with the overall female discrimination rate of 24.2 percent. This demonstrates that the non-metropolitan jobs had only a minor impact on our overall result, and leaves the manual nature of gardening employment as the most obvious distinguishing characteristic to explain its higher incidence of discrimination against females. Unfortunately, further examination of the proposition that females are more disadvantaged in the area of manual employment would require making applications to occupations which almost invariably require telephone enquiries. Matched pairs of telephone applications would lack the advantages of correspondence testing which were listed above. Obviously it would not be possible to exercise as much control over the content of applications as is achieved in correspondence testing, and there is inevitably the risk that telephone applicants would vary in enthusiasm, manner, or some other relevant hiring characteristic. It would be impossible to effect a reversal procedure comparable to that applied in correspondence testing, and consequently one could not demonstrate to a reader that precision of control had been applied during the experiment.¹

Computer Analyst-Programmer. Computer analyst-programmer, in which discrimination against females was also statistically significant, lies at the other end of the socio-economic spectrum from gardener. Of the occupations in our study, analyst-programmer and management accountant are the most senior in the managerial hierarchy; and if we combine the results for these two occupations we find that the rate of discrimination against females was 17.4 percent, compared with a male rate of 8 percent. In these two senior jobs women encountered discrimination at more than twice the male rate. Moreover, a chi-square calculation for these two occupations in combination yields a value of 8.11, which is significant at the .005 level; that is, the probability is less than half of one percent that the result is the outcome of chance. Therefore, we conclude that there is significant discrimination against women towards the top of the managerial hierarchy. Certainly accounting has not traditionally had strong female representation; in 1981 less than one in ten of the accountants employed in Victoria was female. Our study demonstrates that this under-representation of females is, at least, partly attributable to the demand-side of the labor market.

It is also worth noting that we recorded a higher rate of discrimination against males than females for computer programmer, which is subordinate in the hierarchy to analyst-programmer. This result was *not* statistically significant, so considerable caution must be exercised in interpreting it; but it has been traditional in areas as diverse as commerce, education, and health for the higher status jobs to be bereft of women, whose relative concentration is to be found lower in the employment hierarchy.

Interpretation of the Results

The principal purpose of correspondence testing is to provide a direct and unequivocal measure of discrimination in labor market hiring. In addition, we can investigate the pattern of our results for possible inferences about the sources of discrimination. Why do a proportion of employers deny themselves the opportunity to consider for employment a group of applicants distinguished only by names associated with their gender? In eschewing women for interviews are they acting inconsistently with profit-maximizing norms, especially in a society where such discrimination is legally proscribed? First, we must briefly survey the theoretical literature on discrimination, as a reference point for the investigation of our data. But we do so with D'Amico's caveat in mind: "... they [neoclassical economic theories of discrimination] are almost purely speculative in nature, the lack of systematic empirical verification emanating in part from the theories themselves, which tend to yield vague and untestable conclusions" [1987, 314].

The proposition that discrimination can be analyzed as a "taste" possessed by various individuals, which they indulge at some economic cost, was proposed by Becker [1957]. Employers are analyzed as being prepared to pay a wage premium to the preferred group of workers, in order to avoid labor market contact with the group to whom they are averse. Alternatively, customers pay a higher price to indulge their taste of containing product market contact to the preferred group. In this approach employers are no longer strict profit maximizers, as avoidance of the psychic cost of contact with the "wrong" race, gender, etc. takes precedence over increasing profits. If employer tastes are heterogeneous there is an obvious competitive advantage to those without discriminatory tastes, and therefore the process of economic Darwinian evolution should ensure the long-run elimination of labor market discrimination. As Arrow [1973, 192] observed, Becker's model "... predicts the absence of the phenomenon it was designed to explain." A competitive product or capital market would eliminate discriminatory employers, so that labor market discrimination could not persist.

There have been several suggestions about how to reconcile this theoretical conclusion with the obvious empirical failure of market forces to eliminate discrimination. Arrow [1973] postulated that adjustment costs in the hiring and firing process would significantly slow the market's elimination of discrimination. Alchian and Kessel [1962] hypothesized that a competitive capital market might not guarantee the absence of discrimination if there is monopoly in the product market, as maximization of money profits might provoke reaction from government or a regulatory authority,

in which case performance below this maximum level of profitability would not pose a risk of take-over. In such a situation, a monopolist could indulge a taste for labor market discrimination, without the consequent loss of profit threatening the discriminator's survival. This all leads to Marshall's conclusion: "The implication of this analysis is that economic discrimination is mainly a reflection of 'market imperfections' and monopoly power; other discrimination should tend to disappear in the long run" [1974, 852].

Where consumers display discriminatory tastes, there will be a transmission to the labor market, with employers merely acting as agents. Such an expression of discriminatory tastes would manifest itself in a failure of employers to hire members of the "wrong" race, gender, etc. in those jobs in which worker-customer contact occurred. A third group which may react unfavorably to contact with female workers is the male labor force, particularly where women occupy supervisory positions. Where such reactions threaten morale and workplace harmony, or involve X-inefficiency, employers have a cost-minimizing incentive to avoid female employees [Leibenstein, 1966]. In this case employers would transmit the discriminatory tastes of male employees, and discrimination would manifest itself particularly in a failure to hire women, especially in jobs in which they would be hierarchically superior to men.

Bergmann has written a trenchant criticism of the proposition that competitive market forces will eliminate discrimination:

The applicability of this theory to a real situation (as opposed to its validity as a piece of deductive logic) depends on three assumptions that may or may not be true in any particular time or place: (1) that there are large numbers of people who are willing and able to openly violate social customs, which they themselves support and enjoy, for purposes of making money, (2) that violating customs does not entail costs that cancel out the advantages of cheap wages, and (3) that competition is intense enough to put out of business those who refrain from violating customs. [1989, 50]

She then goes on to cite a legal case, involving the car-rental firm Hertz, in which the judge concluded that Hertz's history of discriminatory behavior against women in management positions was a long one. It is therefore appropriate to investigate the pattern of our results to see if discrimination is associated with product market circumstances which curtail the intensity of competition. Alternatively we must investigate whether discrimination is associated with employee-customer contact or with a hierarchical superiority to male employees, where the violation of social customs may entail significant costs to the employer, thereby inducing conformity.

A different theoretical approach to discrimination stresses incomplete information about the productivity of individual workers, which induces employers to resort to generalizations about the labor force characteristics of groups as a screening device to minimize the cost of information acquisition in the hiring process. This approach has been particularly identified with Arrow [1973] and Phelps:

...the employer who seeks to maximize expected profit will discriminate against blacks or women if he believes them to be less qualified, reliable, long-term etc. on the average than whites and men, respectively, and if the cost of gaining information about the individual applicants is excessive. Skin color or sex is taken as a proxy for relevant data not sampled. [1972, 659]

In these statistical theories of discrimination, employer beliefs may be based on genuine empirical experience, prejudice, or misperceptions of reality, perhaps deriving from obsolete information. In the case of women, this activity is particularly directed at their maternal role: their job tenure may be under suspicion because of possible pregnancy and their reliability may be suspect because of child-care responsibilities. Discrimination of such a statistical nature would most likely be associated with occupations which have substantial fixed costs of employment, thereby deterring the employment of groups with higher turnover rates.

The occupational pattern of discrimination in our study is not consistent with this latter statistical discrimination hypothesis. If women do have higher job turnover and absentee rates than men then this should have been a deterrent in occupations such as computer programmer and industrial relations officer. Women in these occupations did not, however, encounter discrimination equivalent to that in occupations such as computer analyst programmer and gardener. It simply cannot be argued that analyst programmer and gardener, of our seven occupations, have any distinguishing characteristic of fixed employment costs attached to them.

In Table 3 we provide a classification of our results, for computer analyst programmer, into competitive and non-competitive sectors. The non-competitive sector includes government; public employers, such as emergency services; non-profit organizations, such as charities; and large firms which benefit from a degree of market protection. The competitive sector is composed of small to medium-sized firms which are subject to competitive market pressure. It is quite clear that discrimination is *not* associated with a lack of competitive pressure, as the percentage of competitive firms which discriminated against women is slightly in excess of the percentage of non-competitive employers who so discriminated. Those discriminating included several small firms providing accounting and computer consulting services. This result is consistent with the findings of Oster [1975]. It is not meaningful to conduct an equivalent investigation of discrimination patterns in the case of gardener, as our observations for that occupation came predominantly from public sector employment; a handful of small scale private sector employers was insufficient to provide a meaningful analytical contrast.

We now turn to examine the hypothesis that labor market discrimination derives from a desire by employers to avoid the costs of violating social customs. Akerlof [1980] constructed a model to analyze whether the pursuit of economic gain would erode those social customs which produce labor market discrimination. He concluded that "... such customs may, once established, continue to be followed with a stable fraction of the population believing in those customs and also following them" [ibid.,

TABLE 3
Results of Correspondence Testing by Sector

Sector	Computer Analyst Programmer		
	Discrimination Against Female	Discrimination Against Male	Equal Treatment
Competitive Percent	10 18.9	3 5.7	40 78.4
Non-Competitive Percent	7 17.5	3 7.5	30 75

772]. None of the occupations in our study, however, involve any significant contact between customers and employees, and certainly gardener and computer analyst programmer are not distinguished in this respect from the other occupations investigated. We therefore conclude that the discrimination reported in this study cannot be attributed to the exercise of discriminatory tastes by customers.

Finally, we turn to the possibility that discriminatory tastes of male employees may deter the employment of women in positions where the costs of violating social custom would be particularly severe. It was noted above that discrimination was significant at the top of the managerial hierarchy. Analyst-programmers and management accountants are more likely to have subordinates than are payroll clerks, computer operators, industrial relations officers, and computer programmers. The discrimination detected in the first two of the occupations may thus result from employers seeking to avoid the costs of violating social custom ("social custom" in this case being the rejection of women in positions of hierarchical superiority). Obviously the discrimination observed in gardening cannot be ascribed to this particular custom. As gardening was the only manual occupation in the study it is hazardous to infer the source of the discrimination; but perhaps "social custom" in manual occupations extends to the rejection of women as hierarchical equivalents in the work place.

SUMMARY AND CONCLUSIONS

Our direct experimental investigation of labor market hiring practices demonstrated the persistence of gender discrimination, despite legislative attempts to eliminate it. There was statistically significant discrimination in a manual occupation traditionally dominated by men and in relatively senior managerial employment where women have gained only a small foothold. We conclude that the pattern of discrimination detected in this study was not attributable to the application of statistical screening criteria, nor did we find an association with product markets where employers were protected from competitive pressure. Instead we conclude that the most likely motivation for the discrimination was the X-inefficiency which results from women occupying positions of hierarchical superiority.

An important outcome of this study, for policy formulation, is that in none of the cases of discrimination would the role of gender as a screening criterion have been in any way apparent to the rejected applicant. While an unsuccessful job applicant may at times suspect that some personal characteristic, such as gender, was responsible for their failure to be interviewed, given current hiring practices, as exemplified in this study, there is no way in which such a suspicion could be confirmed. It follows that an applicant who has been discriminated against would rarely be able to initiate a complaint under the Equal Opportunity Act; i.e., she would be in no position to know, moreover to demonstrate, that a *prima facie* case of discrimination existed. This finding supports Bergmann's advocacy of a switch from a complaint-based strategy to an investigative one, on the model of tax enforcement.

Even if the enforcement agencies had far more resources than they do, there are other reasons for not relying on a complaint-orientated strategy. Many — indeed, most — victims of discrimination may be unaware they are being discriminated against. People who apply for a job and are turned down are in no position to judge whether the refusal has been based on their race or sex, or represents merely a fair judgement on their qualifications. Sometimes the news of a job opening does not get to anyone but members of the race-sex group already incumbent. Rejected job applicants are not in a good position to get together to organize a law suit. Yet such cases, were they brought by an enforcement agency, might be among the most useful in setting patterns of fair behavior for employers [Bergmann, 1986, 158-159].

An alternative or complementary policy to introducing an investigation strategy would be to switch the onus of proof from the job applicant to the employer; oblige the employer, in any case of alleged discrimination, to demonstrate that he or she had not engaged in discriminatory hiring practices. Just such a plan was proposed in a policy document of the British Labour Party in 1991. "Instead of women having to prove discrimination the employer will have to prove non-discrimination" [Labour Party 1991, 10]. There is room for debate on *how* to strengthen anti-discrimination legislation, but there can be little doubt about the *need* to strengthen it.

NOTES

1. For these reasons we decided to confine our testing to the correspondence method. Consequently we are unable to explore further the proposition that females active in the Victoria labor market face a greater incidence of discrimination where their job applications are in the area of manual employment. Certainly, manual employment in general, and gardening in particular, has not been a traditionally strong area of employment for women active in the Victoria labor force. In 1981 less than one in seven of the gardeners working in Victoria was female, and our results indicate that the demand-side of the labor market bears some of the responsibility for the gender imbalance of this occupation.

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