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Reality or Illusion: The Importance of Creaming on Job Placement Rates in Job Training Partnership Act Programs

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REALITY OR ILLUSION: THE IMPORTANCE OF CREAMING ON JOB PLACEMENT RATES IN JOB TRAINING PARTNERSHIP ACT PROGRAMS

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FOREWORD

Critics of the Job Partnership Training Act of 1982 (JTPA) argue that most of its job placement success has been the result of the "creaming" of participants--that is, of serving individuals who are most employable at the expense of those most in need. Using a bivariate probit model of JTPA trainee selection and job placement success, this paper analyzes the selection of JTPA past recipients. It provides a first approximation of the importance of non-random selection on job placement rates. Creaming is found to take place within service delivery areas (SDAs), especially with respect to the avoidance of eligible high school dropouts, but private industry councils do not simply maximize their job placement rates. The authors estimate that, in the absence of creaming, placement rates in Tennessee would fall by 18 percent. But the major change would come in increased enrollment in urban areas, not in the socio-economic characteristic of enrollees within SDAs.

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David Greytak
Director
Metropolitan Studies Program
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REALITY OR ILLUSION: THE IMPORTANCE OF CREAMING ON JOB PLACEMENT RATES IN JOB TRAINING PARTNERSHIP ACT PROGRAMS

The Job Training Partnership Act of 1982 (JTPA) initiated the nation's principal training programs for disadvantaged or dislocated workers in the 1980s and 1990s. Unlike its predecessor--The Comprehensive Employment and Training Act (CETA) of 1971--the JTPA relies exclusively on training to improve employment. In addition, local administrative units, or private industry councils (PICs), are the principal administrators of this training. Federal control over PICs is through program performance standards, including employment and wage targets for adult and youth participants, and cash rewards for meeting or exceeding targets.

The JTPA program performance standards create incentives which encourage the local PICs to choose those most likely to become employed after they complete their training. Recent empirical evidence suggests that certain more difficult to train and place groups in the eligible population are underserved in the JTPA.[1]

In testimony before the Senate Labor Committee in 1990, then Secretary Elizabeth Dole described the JTPA as "...the most successful training program undertaken, with 68 percent of those who finish the training program being placed in jobs" (Karr, 1989). Critics of the JTPA argue that the high placement job rates achieved by the program over the past decade have in large part been the result of "creaming" of participants--that is, of serving individuals who are most employable at the expense of those most in need. However, the relative importance of this selection bias on JTPA placement rates has not been determined, nor has the degree that placement rates would fall if selection were random within the eligible population. Legislation now before Congress is intended to reduce the incidence of creaming by requiring training to be better targeted to the disadvantaged who face multiple barriers to employment. Barriers

mentioned in the proposal include welfare dependence, long-term unemployment, and lack of a high school diploma (Employment and Training Reporter, 1989). Whether this kind of legislative change will significantly affect job placement rates is unknown.

In this paper, we provide a first approximation of the importance of non-random selection of JTPA participants on the job placement rates achieved by PICs. We use data from the Tennessee JTPA program to measure the selection of JTPA participants and to estimate the importance of the socio-economic characteristics of trainees, including several of the barriers to employment mentioned in the proposed amendments to the Act, on their probability of job placement. Because we argue that PICs are encouraged to cream by the performance criteria they face, we adjust our job placement equation for selection bias. We assume PICs understand the program performance standards on which they are judged and can estimate the probability that people with different observable socio-economic characteristics will meet the job placement criteria in the JTPA evaluation process. This assumption is reasonable given that a majority of PIC members are representatives of the local business community.[2] Our empirical model can then gauge the relative importance PICs place on maximizing job placement rates versus serving the more disadvantaged.

We find that creaming does take place, especially with respect to avoidance of eligible high school dropouts, but PICs do not appear to simply maximize job placement rates. In fact, we find that despite significantly lower expected placement rates, women are still proportionally represented among trainees and AFDC mothers are somewhat overrepresented among trainees. In addition, we find that while creaming does increase placement rates, its elimination would not dramatically reduce rates. If the working age economically disadvantaged population in Tennessee eligible to participate under current rules were randomly selected into the client population, we estimate placement rates would fall by 18 percent. Most of this drop would be

due to two factors: an increase in enrollment in urban areas and an increase in the participation of high school dropouts.

The Job Training Partnership Act of 1982

The JTPA was the cornerstone of the Reagan Administration's Human Resources Development Program. It remains the single largest training program in the Bush Administration. Yet even after a decade of operation it continues to be surrounded by controversy. Several bills are currently before Congress which, if passed, would importantly change the mix of trainees the program serves and its internal success standards.

Controversy over the mix of JTPA clients come as no surprise to those who have followed this program since it was established through a compromise engineered by Senator Edward M. Kennedy and then Senator J. Danforth Quayle. Embedded in the language of the bill were two conflicting goals. One was to target training on the most difficult to employ among the economically disadvantaged, and the other was to target training on the economically disadvantaged who were best able to utilize it. Because funding was available to serve only a small fraction of the eligible population, the controversial task of selecting trainees for this program was left to the PICs.

The Reagan Administration wanted the JTPA to stand apart from the job training programs of the 1970s, especially CETA. Hence, JTPA provides a much greater role for state and business leaders in the day-to-day operation of the program. The governor establishes service delivery areas and each area has a PIC which develops all training contract services jointly with local elected officials. No public service jobs are available under JTPA, so the PICs rely solely on the private market to absorb all trained workers. Oversight for the program is largely in the hands of the state governor, but within the rather wide limits of the law, who is served is largely left to

local administrators. It is this controversial power that is at the heart of the criticism of the JTPA by congressmen who want to exercise greater control over who is served.

Because the Reagan Administration wanted training implementation decisions to be made at the local level rather than in Washington, it was necessary to develop performance standards to both encourage PICs to carry out the goals of the program and to monitor their success in so doing. In this oversight capacity, federal and state officials use a mixture of minimum performance standards and incentive money reward rules. PICs are penalized for not meeting their performance standards and rewarded for doing exceptionally well in keeping their cost per trainee low and their job placement rate high. Anderson et al. (1991), shows that this system encourages PICs to cream. PICs usually must meet some maximum cost per trainee standard and some minimum employment standard. If it is true that for any quality of client, the higher the employment rate desired, the higher the training costs per client, then one can image a series of isocost curves in which more difficult to train individuals make achieving employment targets more costly to the PICs. And accepting lower-quality trainees prevents PICs from meeting both their cost and employment standards. When they fail to meet standards, they are penalized by the state and could lose control of their program (Rubin and Zornitsky, 1988). To prevent this from happening and to obtain part of the incentive money available, PICs are likely to choose less difficult to train participants, unemployed high school graduates, for example.

Performance standards with penalties for non-compliance constrain PICs to serve a client mix with at least some minimum level of skills. Rewarding PICs for exceeding performance standards can further increase the quality mix served if obtaining incentive money is important to PIC administrations. Both these results suggest that creaming is likely to occur in the JTPA, but the form it takes and its significance can only be measured by empirical analysis.[3]

An Empirical Model of Expected Job Placement and Selection

To test the importance of creaming, we develop and estimate a joint model of the selection of JTPA trainees and the probability of job placement of trainees upon completion of the program. We assume the placement of trainees in jobs is the result of a two-stage process. In the first stage, PICs determine how many trainees will be admitted from the pool of program eligible disadvantaged in their service delivery area. Some decision rule is necessary. If selection of participants is nonrandom, then the probability of participation (y_1^*) depends on a vector of characteristics (X_1) that measures the client's potential for success. Since PICs are rewarded for high job placement, it is expected that selection will be based at least to some degree on characteristics that are related to placement. The selection equation is:

$$y_1^* = X_1' B_1 + e_1 \qquad \textbf{(1)}$$

where B_1 is a vector of coefficients of X_1, measuring the effect of characteristics on the probability of being selected for the JTPA program, and e_1 is a random error term measuring the influence of unobserved characteristics on selection. These characteristics are observed by the PICs but unobserved in our data.

In the second stage, the selection of participants also influences their placement in jobs. The probability of a placement y_2^* depends on the characteristics of the trainee, as well as, the training provided. The probability of a placement is:

$$y_2^* = X_2' B_2 + e_2 \qquad \textbf{(2)}$$

where B_2 is the vector of coefficients on X_2, and e_2 is a random error term.

The effect of nonrandom selection is reflected in two ways in the model. If trainees are selected based on observed characteristics, X_1 and these characteristics influence placement, then

selection bias will influence placement rates. If PICs are primarily interested in maximizing placement rates, we expect to find a strong positive correlation between the characteristics that increase expected placement and selection into the program. Trainees may also be selected based on traits observable to the PICs like ability and motivation but unobserved in the data. If these (e_1) traits are correlated with placement, this selection will also affect observable placement rates.

To estimate our joint selection-placement model, we assume the errors in equations (1) and (2) have a bivariate normal distribution. We then estimate a bivariate probit selection model. The estimation of a positive ρ indicates that those most likely to be selected (the most motivated to work) are also the most likely to obtain jobs.

Data and Variables

Despite the fact that section 165(c)(2) of the JTPA requires the collection of program data suitable for evaluation, a major criticism of JTPA nationally is the lack of data provided for policy analysis (Levitan and Gallo, 1988). Fortunately, the State of Tennessee has compiled excellent data on the socioeconomic characteristics of all its JTPA trainees and has linked these data to program information. The trainees used in our analysis were economically disadvantaged adults (aged 22 through 60) first enrolled in the Title II-A 78 percent jobs program in 1987.[4] This is the largest program under the JTPA and is targeted primarily on adults.

In order to determine if the most difficult to train are underrepresented in the trainee population, we need to estimate the population potentially eligible for participation. The data used to estimate the economically disadvantaged population in Tennessee come from the March 1986, 1987, and 1988 Current Population Surveys (U.S. Department of Commerce 1986, 1987, 1988) which are random samples of the Tennessee populations in these years.

Those who are deemed economically disadvantaged are eligible for participation in JTPA.[5] Section 4(8) of the 1982 Act defines "economically disadvantaged" as an individual who is

receiving welfare or food stamps, is in a family with income below the poverty line; is a foster child receiving government assistance, or is handicapped. The data contained in the CPS allow us to identify those who fit the official definition of economically disadvantaged, with two exceptions. There is very little information on handicapped individuals and no information on foster children. Therefore, our sample of the economically disadvantaged includes only those who satisfy the first three criteria.[6] Since we are interested in selectivity and placement of the working age adult population, we focus on people who are between the ages of 22 and 60.

Observable socioeconomic characteristics associated with job placement that are used in both our placement and selection equations are: sex; race; whether the person completed high school, whether training was in an urban or rural service delivery area; and receipt of transfer payments from Supplemental Security Income, Unemployment Insurance, or Aid to Families With Dependent Children. We rely on nonlinear identification of our model since the same exogenous variables are included in both the selection and replacement equations. Our measure of job placement success is whether the trainee is placed in a job within three months of successfully completing training. This is the success criteria used by the State of Tennessee to evaluate its PICs.[7] The precise definitions of all variables and a more detailed discussion of the CPS sample frame is found in the Appendix.

With the exception of the regional location of training variable, all these characteristics are mentioned in current or proposed regulations as linked to barriers to employment. Hence, females, blacks, high school dropouts, those receiving transfers, and older workers are all considered to face additional barriers to employment; and it is feared that PICs systematically avoid enrolling such persons in JTPA programs (Thompson, 1988).

Results

Table 1 provides a first look at the degree to which the trainee population differs from the eligible population with respect to our list of socioeconomic characteristics. Column (1) lists the socioeconomic variables discussed above; column (2) shows the percentage of trainees who have that characteristic and its standard deviation; column (3) does the same for the eligible population (those in the CPS sample). In column (4) a positive t-statistic indicates that the JTPA trainee population with this characteristic is larger than the proportion with this characteristic in the eligible population. This simple one-variable test is implicitly used by federal and state oversight officials to measure the degree to which creaming takes place. By this method, blacks, high school dropouts, SSI recipients, urban residents, and older workers are significantly underrepresented in JTPA programs.

These differences are consistent with the creaming hypothesis, particularly the dropout result. If failure to complete high school signals a high-cost difficult to place trainee, PICs have incentives to increase the representation of graduates in the pool of clients.

Such tests of selection, however, miss the multidimensional aspects of individuals, and they do not view creaming within the context of a model of expected job placement. In Table 2, we report the results of our bivariate probit model of trainee selection and job placement success. We find that many of the socioeconomic characteristics judged by the JTPA to be barriers to employment do in fact reduce the likelihood of placement in a job following training. The two exceptions are being black, which has a positive sign but is insignificant, and receiving Unemployment Insurance, which is significant and positive.

As expected, PICs do appear to take into account several of these negative placement characteristics in making their trainee selections but not all and not uniformly. While blacks, dropouts, urban dwellers, those on SSI, and older workers were less likely to be selected, sex had

TABLE 1

PROPORTION OF SUBGROUPS OF TENNESSEE POPULATION OF ECONOMICALLY ELIGIBLE FOR JTPA AND ACTUAL PARTICIPANTS

Variable	Participants (JTPA data)	Eligibles (CPS Sample)	t-Statistics[a]
Female	.569 (.495)	.584 (.493)	-1.09
Black	.223 (.416)	.342 (.475)	-8.73*
Dropout	.363 (.481)	.729 (.492)	-27.78*
AFDC	.129 (.335)	.120 (3.25)	10.84*
SSI	.044 (.206)	.123 (.328)	-8.50*
UI	.069 (2.53)	.022 (.146)	9.85*
Urban	.241 (.428)	.616 (.487)	-26.66*
Older Worker	.084 (.277)	.107 (.436)	-13.91*
Sample Size	9109	1335	

*Significant at the 1 percent level.

[a] $t = \dfrac{\hat{P}_1 - \hat{P}_2}{S_{\hat{P}_1 - \hat{P}_2}}$.

no significant effect on selection and AFDC recipients were more likely to be chosen. Our model also controlled for unobservables. Our measure of the correlation among residuals, ρ, is positive but small and statistically insignificant. Hence, while there is strong evidence that PICs are significantly influenced by the observed characteristics of eligibles in the selection of their trainee population, we find no evidence that unobservables matter.

The actual pattern of creaming can best be seen in Table 3 which orders the variables by the power of their effect on expected job placement success. Note that in Tennessee being on SSI and being served by an urban PIC are the single most negative predictors of job placement. It is impossible to tell from our analysis whether the urban impact reflects a relatively worse economic environment in urban service delivery areas or a weaker training program. But this kind of across jurisdiction outcome is not usually considered by those who are concerned with creaming. It also is the most important negative influence on selection. The urban economically disadvantaged are 18 percent less likely to be enrolled in a training program in Tennessee than are the rural disadvantaged.

The most important predictor of job placement is receiving SSI payments. Because our population is under age 60, all those receiving SSI are both significantly limited in their ability to work and have work histories that are insufficient for eligibility for regular social security disability benefits. This disabled population faces significant barriers to employment and is also significantly underrepresented in the trainee population. It has the third largest percentage of underrepresentation. Women receiving AFDC benefits make up the third group least likely to find a job after training yet they are not significantly underrepresented. However, the pattern returns for high school dropouts whose expected placement rate is about that of AFDC mothers but who are systematically underrepresented in the trainee population. Of the four characteristics that

most reduce job placement, three are also the most underrepresented groups in the trainee population.

The next most important factor in the job placement equation is receiving Unemployment Insurance transfers. Those who are doing so are both more likely to be placed and to be selected. This is not too surprising since in order to be eligible for benefits one must have a recent work experience and, hence, be more closely tied to the job market that those whose benefits have run out or whose work history does not make them UI program eligible. The final variable that significantly affects job placement is gender. Women are more difficult to place but, like AFDC recipients, are not significantly underrepresented. Older workers are not more difficult to place but nonetheless are significantly underrepresented. However, the underrepresentation is small. We find that being black does not significantly alter placement. But they are also slightly underrepresented in the trainee population.

The results of Table 3 provide mixed support for the view that PICs cream. There does seem to be a relationship between characteristics which predict low placement and selection, but the relationship is not perfect. To determine the extent to which selection has affected official placement rate, we turn to Table 4.

The probit equations estimated in Table 2 allow us to measure the importance of creaming on overall placement rates as well as the individual influence of each characteristic on this measure. In Table 4, we report the results of simulations using these equations. Column (1) in Table 4 reports the characteristics of program eligibles; column (2) contains estimates of the probability of job placement if random selection from the CPS sample occurred in this variable, other things held constant; column (3) gives the percentage change in the job placement probability that would occur from this random selection. For example, if we randomly select on all the traits in the model, the probability of job placement is 56.7 percent or a drop of placement

TABLE 2

SELECTION AND JOB PLACEMENT EQUATIONS FOR JTPA

Variables	Selection	Placement
Constant	1.118* (.043)	.485* (.080)
Female	-.057 (.037)	-.174* (.030)
Black	-.137* (.042)	.005 (.037)
High School Dropout	-.840* (.031)	-.508* (.071)
Urban	-.931* (.038)	-.386* (.071)
AFDC	.633* (.071)	-.363* (.053)
SSI	-.400* (.071)	-.508* (.071)
UI	.467* (.084)	.196* (.062)
OlderWorker	-.510* (.050)	-.093 (.065)
RHO	.063 (.225)	
N	9293	8743

*Significant at the 1 percent level.

TABLE 3

MARGINAL IMPACTS OF SOCIO-ECONOMIC CHARACTERISTICS ON SELECTION AND PLACEMENT

Variable	Job Placement	Selection
SSI	-.194*	-.076*
Urban	-.170*	-.183*
AFDC	-.135*	.068*
Dropout	-.131*	-.143*
UI	.066*	.052*
Female	-.061*	-.009
Older Worker	-.034	-.010*
Black	-.002	-.022*

*Significant at the 1 percent level.

TABLE 4

IMPORTANCE OF CREAMING ON PROGRAM PLACEMENT RATES BY SOCIO-ECONOMIC VARIABLE

Variables	Placement Rate with Random Selection (percent)	Percentage Point Change in Placement Rate
All	56.7	-12.7
Urban	63.4	-5.3
SSI	67.2	-1.4
AFDC	69.6	1.0
Dropout	63.8	-5.3
UI	68.3	-0.3
Female	58.9	-0.1
Black	68.7	0.02

of 12.7 percentage points from the actual observed probability. If we randomly select only on whether the person is a high school dropout, the probability of job placement is 63.8 percent, a drop in overall placement probability of 5.3 percentage points.

From this table, we find that if PICs in Tennessee randomly selected their trainees with respect to socioeconomic variables, we estimate that placement rates in that state would fall from 69.4 percent to 56.7 percent, or by 18 percent. Clearly creaming has an influence on success rates, but its influence appears to be much less important than feared by many program critics. With respect to Tennessee, at least one important reason for variation from the eligible population has to do with the distribution of training slots across PICs rather than within them. Over one-third of the difference between job placement rates in a random sample and in the actual sample is due to underrepresentation of urban eligibles. High school dropouts also explain one-third of the difference while SSI recipients account for another 8 percent. Surprisingly none of the other groups have more than a very small effect on overall rates, either because they are not significantly over- or underrepresented or because there is no strong placement effect related to them.

The counterfactual used in this paper is what would have happened in the absence of selective enrollment into the JTPA program. As we have seen if one's measure of creaming is underrepresentation of subgroups within the eligible population with lower expected job placement rates, then creaming does not seem to be as large a problem in the JTPA as its critics suggest. On the other hand, it may be the intent of some critics of the JTPA to target more than a representative proportion of training slots to these "doubly disadvantaged." If this is done, it is likely that the success rates will fall even further. For instance, if the program were targeted exclusively on high school dropouts, then overall success rates in Tennessee would fall 13 percentage points or by about 20 percent.

Conclusion

The JTPA allows local PICs considerable power to choose their trainee population and the methods it uses to place them in the local job market. Federal controls of PIC behavior is limited to establishing minimum program standards and providing rewards for meeting or exceeding targets. We have seen, however, standards that encourage high placement rates inevitably signal PICs to cream. This has led program critics to argue for greater control of the client mix by Washington to ensure that those most in need are served. Such critics justify this shift in decision-making by arguing that the high JTPA job placement rate is an artifact of rampant creaming.

Our results suggest that creaming does take place in the JTPA, but that its importance in explaining placement rates in the JTPA is modest and far smaller than program critics imply. In addition, at least for our sample from the State of Tennessee, underrepresentation was in large part a function of the distribution of trainee positions across urban and rural service delivery areas rather than of PIC creaming within them. Only the physically handicapped (SSI recipients) and those handicapped by poor education (high school dropouts) were both significantly less likely to be placed in a job and significantly less likely to be served by PICs.

Using our simulation model to correct for selection, we find that job placement rates would decline by only about 18 percent if the JTPA trainee population exactly mirrored the eligible population. However, it may be that rather than simply providing training in a proportional way to the eligible population, JTPA should over target those who are most in need. This goal seems consistent with some of the language in the original Act. Such a policy may better represent what Congress had in mind. But it is important to recognize that such targeting is very likely to lower job placement rates. Our simulation estimate shows, for instance, that if PICs in Tennessee were required to exclusively target high school dropouts their placement rates would fall by 20 percent. It is imperative that policymakers explicitly recognize this trade-off and match

mandates for greater service to the most needy with lower placement standards. To do otherwise would be to unfairly criticize PICs for simply doing what they are told.

Appendix

The sample used to estimate those eligible for JTPA is taken from a combined sample of the 1986, 1987, and 1988 Current Population Survey. The CPS is a yearly survey of approximately 70,000 housing units in the United States. Since it is an annual survey, it presents more current information than the 1980 Census which is used by the USDOL to estimate the eligible JTPA population.

Each CPS year contains approximately 1,700 people from Tennessee. Of these, only about 25 percent or 425 are defined as economically disadvantaged in each year. Because we divide our sample of economically disadvantaged into adults and youth and exclude those over age 60, a single-year sample is quite small. This small sample size will decrease the reliability of statistical tests. Therefore, we pooled the three samples.

To ensure that we were not combining significantly different sample populations, we computed the proportions of relevant subgroups in each year of the CPS and performed difference-of-means tests to determine whether any significant differences exist. Overall, it appears that there was a significant decrease in the proportion of the population defined as economically disadvantaged over the three years. But we found no significant difference in the characteristics of the population of Tennessee over the 1986-1988 period.

TABLE A-1

LIST OF VARIABLES

Job Placement Success	equals 1 if obtained a job within three months of successfully completing JTPA training
Female	equals 1 if female
Black	equals 1 if black
Dropout	equals 1 if highest education level is less than 12
AFDC	equals 1 if household received AFDC payments in past year
SSI	equals 1 if received SSI payments in past year
UI	equals 1 if received UI payment in past year
Urban	equals 1 if lives in Memphis, Nashville, Knoxville, or Chattanooga areas
Older Worker	equals 1 if aged 51 to 59

Endnotes

1. For example, Anderson et al., (1991) find in Tennessee that 58 percent of disadvantaged workers are high school dropouts while only 32 percent of JTPA participants in the JTPA are dropouts. Sandell and Rupp (1988) find similar results for the nation as a whole. Among eligibles, dropouts account for 36 percent of the population; within the JTPA, 27 percent are dropouts. The unemployment rate of dropouts is significantly higher than for high school graduates.

2. According to Levitan and Gallo (1988), the typical PIC contains 25 members with 14 members from the business community. The chair of the PIC is a business representative.

3. See Anderson et al., (1991) for a more detailed outline of the creaming model.

4. Title II-A is the largest JTPA program and 78 percent of the funds are targeted to serve adults and youths who are disadvantaged. Forty percent of their funds must be spent on youth (aged 16-21). Because our sample size for youth is smaller than for adults, we concentrate on adults.

5. Although there is no age restriction for JTPA enrollment, we limit our study to those under age 60 to reduce the confounding effect of retirement programs that would discourage eligible people from enrolling in any training program.

6. See the Appendix for a fuller discussion of the CPS and our calculation of the economically disadvantaged population.

7. It is important to note that our measure of program success, while conceptually appropriate as a measure of creaming behavior, is not necessarily the appropriate variable to evaluate JTPA success. For instance, it can be argued that one should trace the employment history of JTPA trainees for longer than three months. More fundamentally, one would want to compare trainees with a random sample of non-trainees. A social experiment to test JTPA success in this manner is currently being run by The Manpower Demonstration Research Corporation, but the results are not likely to be known for quite some time.

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