is a 9% increase in average performance. These results imply that the average minority worker is at the 53rd percentile of average cashier performance, while the average minority working with unbiased managers would be at the 79th percentile.

These conclusions would be erroneous if minority workers were simply intertemporally substituting effort towards days with unbiased managers. If they were fully intertemporally substituting, manager bias would not affect average minority performance, it would just lead minorities to perform worse on some days and better on others. The fact that minorities performed better on days without bias would not indicate their higher general productivity or be evidence of statistical discrimination. However, we provide two tests that suggest that minorities are not simply intertemporally substituting effort towards days with unbiased managers. Table 11 shows the effect of working with a more-biased manager on one day on the worker's performance in the rest of the week.[30] Under intertemporal substitution, working with a more-biased manager on one day should lead minorities to perform better in the rest of the week. We find no evidence that this is the case. In fact, minorities scan items significantly slower in the rest of the week when they spend one more day with a more-biased manager.

We can also look at workers' response to manager bias aggregated over longer periods (Appendix Table 10). If a worker is intertemporally substituting her effort within a given period (e.g., at the week or two-week level), performance should be uncorrelated with manager bias at that level of aggregation. However, we find no evidence that the impact of manager bias is attenuated when performance is aggregated over longer periods. For absences, the measured effect of manager bias is relatively constant with the level of aggregation, though it is no longer statistically significant once the data is aggregated. For articles per minute, the measured effect increases as the level of aggregation increases. Consistent with the results in Table 11, this may indicate that there are some cumulative effects of manager bias on scanning speed.

7   Conclusion

The paper has shown that working with biased managers leads minority workers to perform more poorly. When scheduled to work with more-biased managers, minority cashiers are more likely to be absent and they leave work earlier. Because these workers are paid based on time worked, this leads to a loss in wages for minority workers. Minorities also scan items more slowly and take more time between customers when working with biased managers.

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[30]We control for manager bias in the rest of the week and its interaction with the worker's minority status to eliminate the effects of intra-week correlation in manager bias.

It does not appear that this results from manager animus. Instead, it appears that biased managers feel uncomfortable with minority workers and interact less with them, leading minority cashiers to exert less effort.

These results come from one setting: entry-level cashiers in a large French grocery store chain. However, they may be applicable to many other workplace settings. In our setting, biased managers' discomfort with minorities can lead them to monitor minorities less, assign minorities to new tasks less frequently, and not ask minorities to stay late. In other settings, interacting less with minority employees may have larger consequences if it also leads biased managers to train, mentor, advise, or challenge minorities less.

Our results raise the question of the type of policy responses that could be used to ameliorate the impact of manager bias on minority workers. One set of potential policies would aim to directly reduce implicit bias. Beaman et al. (2009) finds that having female leaders reduces implicit bias against women. Outside of the workplace, Rao (2014) and Boisjoly et al. (2006) find that exposure to a group can reduce bias against it. Another set of potential policies would attempt to mitigate the effect of manager bias by directly targeting manager actions. For example, these interventions could encourage managers to interact with all workers equally or provide more specific guidelines about how to manage workers. Investigating the effects of such policies is an interesting question for future research.

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Figure 1A. Manager Bias and Worker Performance
Minority Workers

Note: The size of each marker indicates the number of observations in the bin.
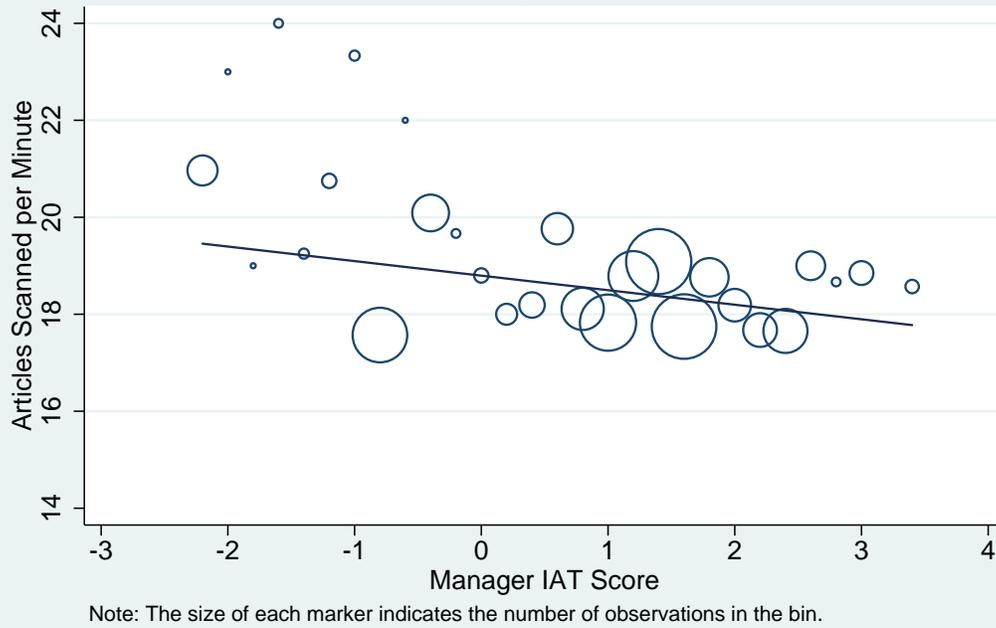
Figure 1B. Manager Bias and Worker Performance
Majority Workers

Note: The size of each marker indicates the number of observations in the bin.
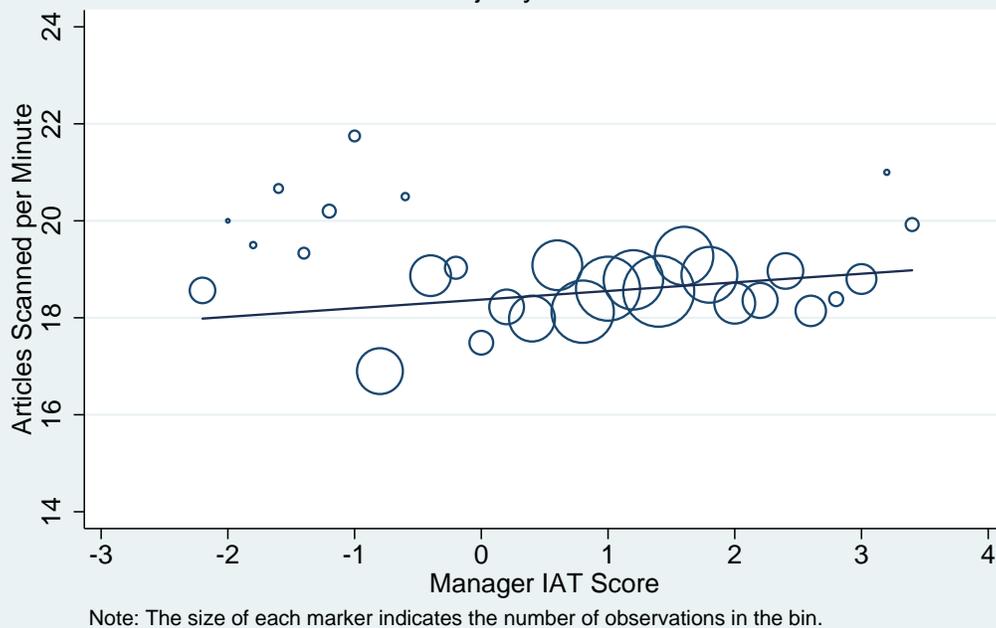
Table 1. Theories of Discrimination and Their Predictions

	Beckerian Taste for Discrimination	Less Interaction and Statistical Discrimination	Stereotypes and Statistical Discrimination	Empirical Findings
Biased managers are [more/less] likely to give minorities unpleasant tasks	More	Less	--	Less
Minorities report that biased managers dislike them	Yes	--	--	No
Biased managers spend less time with minorities	--	Yes	--	Yes
Biased managers make minorities less confident in their abilities	--	--	Yes	No (not consciously)
Minorities are more productive than majority workers when they do not face bias	--	Yes	Yes	Yes

Note: "--" indicates that a particular model does not make a clear prediction.

"Table 2. Descriptive Statistics"

Two main groups: "Administrative Data Sample" and "Worker Survey Sample"

Under Administrative Data Sample: "All Observations from Included Stores" and "Regression Sample (Observations with Manager IAT Scores)"

Under Worker Survey Sample: "All Survey Respondents" and "Survey Respondent Regression Sample"

A. Worker Characteristics
- Minority: 28% | 28% | 29% | 25%
- Male: 6.9% | 7.4% | 7.7% | 7.3%
- Age: | | 29.9 | 30.1
- Number of Previous Jobs: | | 3.9 | 4.0
- Less than High School Education: | | 58% | 61%
- High School Degree: | | 35% | 32%
- More than High School Education: | | 7% | 7%
- Number of Workers: 218 | 204 | 310 | 178

B. Manager Characteristics
- Minority: 6% | 8% | |
- Male: 10% | 7% | |
- Level 4 (High Position): 18% | 18% | |
- Age: 41.1 | 41.1 | |
- Average IAT Score (in Standard Devs): | 1.35 | |
- Moderate to Severe Bias: | 66% | |
- Slight Bias: | 20% | |
- Little to No Bias: | 9% | |
- Preference for Minorities: | 4% | |
- Number of Managers: 154 | 119 | |

C. Shift Characteristics
- Scheduled Days per Week: 4.2 | 4.2
- Scheduled Hours per Day: 7.2 | 7.2
- Absent: 1.8% | 1.6%
- Minutes Worked in Excess of Schedule: -0.31 | -0.06
- Articles Scanned per Minute: 18.5 | 18.5
- Inter-Customer Time (Seconds): 29.2 | 28.7
- Payment Time (Seconds): 50.7 | 50.8
- Number of Shifts: 5,099 | 4,371
- Number of Stores: 34 | 34 | 70 | 51# Table 2. Descriptive Statistics

	Administrative Data Sample		Worker Survey Sample	
	All Observations from Included Stores	Regression Sample (Observations with Manager IAT Scores)	All Survey Respondents	Survey Respondent Regression Sample
A. Worker Characteristics				
Minority	28%	28%	29%	25%
Male	6.9%	7.4%	7.7%	7.3%
Age			29.9	30.1
Number of Previous Jobs			3.9	4.0
Less than High School Education			58%	61%
High School Degree			35%	32%
More than High School Education			7%	7%
Number of Workers	218	204	310	178
B. Manager Characteristics				
Minority	6%	8%		
Male	10%	7%		
Level 4 (High Position)	18%	18%		
Age	41.1	41.1		
Average IAT Score (in Standard Devs)		1.35		
Moderate to Severe Bias		66%		
Slight Bias		20%		
Little to No Bias		9%		
Preference for Minorities		4%		
Number of Managers	154	119		
C. Shift Characteristics				
Scheduled Days per Week	4.2	4.2		
Scheduled Hours per Day	7.2	7.2		
Absent	1.8%	1.6%		
Minutes Worked in Excess of Schedule	-0.31	-0.06		
Articles Scanned per Minute	18.5	18.5		
Inter-Customer Time (Seconds)	29.2	28.7		
Payment Time (Seconds)	50.7	50.8		
Number of Shifts	5,099	4,371		
Number of Stores	34	34	70	51

Note: The first two columns of data provide descriptive statistics for the sample for whom we have administrative data. The first includes all observations from the 34 included stores, while the second includes only observations for which we have the manager's IAT score. The final two columns provide descriptive statistics for the worker survey sample. The first includes all survey respondents, while the second includes only those workers for whom we either have managers' IAT scores or performance data and are thus included in the analysis. Level 4 managers have a higher position in the store than the remaining managers. Manager age is reported as of January 1, 2012. *Moderate to Severe Bias* is defined as having a raw IAT score above 0.35, *Slight Bias* is defined as having a raw IAT score between 0.15 and 0.35, *Little to No Bias* is defined as having a raw IAT score between -0.15 and 0.15, and *Preference for Minorities* is defined as having a raw IAT score below -0.15.

Table 3. Exogeneity of Scheduled Shifts

	Manager Bias	Minority Manager	Male Manager	Level 4 Manager	Total Managers	Articles per Minute in Other Stores on Date	Shift Includes Early Morning	Shift Includes Late Evening	Total Hours	Split Shift
					A. Minority Workers					
Minority Worker	0.005	0.000	-0.011	-0.001	-0.025	0.045	0.014	0.021	0.017	-0.000
	(0.022)	(0.003)	(0.009)	(0.004)	(0.043)	(0.086)	(0.015)	(0.013)	(0.034)	(0.011)
					B. Minority Workers and Manager Bias					
Minority Worker × Manager Bias		0.009	-0.002	0.008	-0.013	0.049	-0.004	0.007	0.038	0.002
		(0.007)	(0.008)	(0.010)	(0.024)	(0.044)	(0.008)	(0.007)	(0.037)	(0.012)
Minority Worker		-0.009	-0.009	-0.010	-0.011	-0.007	0.019	0.013	-0.024	-0.002
		(0.009)	(0.007)	(0.012)	(0.034)	(0.074)	(0.017)	(0.013)	(0.049)	(0.020)
Manager Bias		-0.032	0.015	0.049	0.066	-0.043	-0.002	-0.003	-0.058	-0.017
		(0.021)	(0.025)	(0.033)	(0.048)	(0.093)	(0.011)	(0.019)	(0.062)	(0.022)
Observations	4,371	4,371	4,371	4,371	4,371	4,238	4,371	4,371	4,368	4,371
Dependent Variable Mean	1.13	0.060	0.114	0.171	2.74	18.23	0.141	0.580	7.22	0.465
Store FE.'s	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Each column in Panel A shows the result of regressing the dependent variable indicated by the column heading on an indicator for the worker being a minority. Each column in Panel B shows the results of regressing the same dependent variable on a dummy for the worker's minority status, the manager's IAT score (in standard deviation terms), and the interaction of the worker's minority status and the manager's IAT score. Both the dependent variables and the manager's IAT score are based on the store's schedule, not actual realizations. For example, *Shift Includes Early Morning* is a dummy variable for the shift being scheduled to start at 9 am or earlier, regardless of whether the worker arrived by that time. *Shift Includes Late Evening* is an indicator for the shift being scheduled to end at 8 pm or later. *Manager Bias* is the manager's IAT score, while *Minority Manager*, *Male Manager*, and *Level 4 Manager* are indicators for a manager being a minority, being male, and having a high-level management position, respectively. When workers are scheduled to work with more than one manager, manager variables are averages, weighted by the amount of time workers were scheduled to work with each manager. Observations are worker-days and standard errors are clustered at the store level.

Table 4. Effect of Manager Bias on Time Spent at Work

A. Dependent Variable: Absence Indicator

Minority Worker × Manager Bias	0.0098** (0.0039)	0.0095** (0.0040)	0.0117*** (0.0042)	0.0118*** (0.0043)
Manager Bias	-0.0021 (0.0031)	-0.0021 (0.0032)	-0.0050 (0.0040)	-0.0052 (0.0042)
Minority Worker × Minority Manager				0.0081 (0.0972)
Minority Manager				-0.0057 (0.0153)
Observations	4,371	4,371	4,371	4,371
Dependent Variable Mean	0.0162	0.0162	0.0162	0.0162
R-squared	0.0005	0.0031	0.0835	0.0835

B. Dependent Variable: Minutes Worked in Excess of Schedule

Minority Worker × Manager Bias	-3.295** (1.550)	-3.279** (1.588)	-3.327* (1.687)	-3.237* (1.678)
Manager Bias	-0.002 (1.141)	-0.002 (1.167)	-0.005 (0.969)	-0.005 (1.009)
Minority Worker × Minority Manager				0.349 (10.501)
Minority Manager				-3.712 (4.592)
Observations	4,163	4,163	4,163	4,163
Dependent Variable Mean	-0.068	-0.068	-0.068	-0.068
R-squared	0.001	0.008	0.129	0.129
Individual F.E.'s	Yes	Yes	Yes	Yes
Day of the Week F.E.'s	No	Yes	No	No
Morning/Evening F.E.'s	No	Yes	Yes	Yes
Date F.E.'s	No	No	Yes	Yes

Note: Each column in each panel shows the result of regressing the dependent variable on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. The dependent variable in Panel A is an indicator for the worker being absent. The dependent variable in Panel B is the number of minutes worked in excess of the number of minutes the worker was scheduled to work. The first column includes no additional controls. The second column adds day of the week fixed effects, an indicator for the shift starting at 9 am or earlier, and an indicator for the shift ending at 8 pm or later. The third column includes date fixed effects and drops the day of the week fixed effects. The last column adds a dummy for the manager being a minority and the interaction of the worker's and the manager's minority status. Observations are worker-days and standard errors are clustered at the store level.

Table 5. Additional Results on Time Spent at Work

	Minutes Arrived Before Shift Start	Break Time (Minutes)	Minutes Stayed After Shift End	Stayed Until Shift End	Stayed at Least 10 Minutes After Shift End
Minority Worker × Manager Bias	1.617	1.081	-3.773**	0.014	-0.041*
	(1.858)	(1.381)	(1.674)	(0.024)	(0.023)
Manager Bias	0.633	-0.698	-0.402	-0.005	0.003
	(1.358)	(0.616)	(1.027)	(0.017)	(0.017)
Observations	4,163	4,163	4,163	4,163	4,163
Dependent Variable Mean	4.63	15.55	10.84	0.844	0.437
R-squared	0.121	0.136	0.101	0.129	0.133

Note: Each regression shows the result of regressing the dependent variable indicated by the column on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. The regressions additionally control for the manager's minority status, the interaction of the worker's and the manager's minority status, date fixed effects, and dummies for the shift starting at 9 am or earlier and ending at 8 pm or later. Observations are worker-days and standard errors are clustered at the store level. *, ** denote significance at the 10% and 5% levels, respectively.

Table 6. Effect of Manager Bias on Performance at Work

	A. Dependent Variable: Articles Scanned per Minute			
Minority Worker ×	-0.276**	-0.279**	-0.233**	-0.249**
Manager Bias	(0.109)	(0.111)	(0.108)	(0.111)
Manager Bias	0.140*	0.140	0.080	0.102
	(0.083)	(0.083)	(0.065)	(0.073)
Observations	3,601	3,601	3,601	3,601
Dependent Variable Mean	18.53	18.53	18.53	18.53
R-squared	0.001	0.013	0.195	0.195
	B. Dependent Variable: Inter-Customer Time (Seconds)			
Minority Worker ×	1.213**	1.228**	1.417**	1.360**
Manager Bias	(0.590)	(0.553)	(0.649)	(0.665)
Manager Bias	-0.648	-0.571	-0.656	-0.580
	(0.386)	(0.376)	(0.521)	(0.534)
Observations	3,287	3,287	3,287	3,287
Dependent Variable Mean	28.70	28.70	28.70	28.70
R-squared	0.001	0.013	0.195	0.195
Individual F.E.'s	Yes	Yes	Yes	Yes
Day of the Week F.E.'s	No	Yes	No	No
Morning/Evening F.E.'s	No	Yes	Yes	Yes
Date F.E.'s	No	No	Yes	Yes
Manager Minority Variables	No	No	No	Yes

Note: Each regression shows the result of regressing the dependent variable on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. The dependent variables are the number of articles per minute scanned (Panel A) and the average number of seconds between finishing one customer's transaction and scanning the next customer's items (Panel B). The first column includes no controls. The second column adds day of the week fixed effects, an indicator for the shift starting at 9 am or earlier, and an indicator for the shift ending at 8 pm or later. The third column includes date fixed effects and drops the day of the week fixed effects. The last column adds a dummy for the manager being a minority and the interaction of the worker's and the manager's minority status. Observations are worker-days and standard errors are clustered at the store level. *, ** denote significance at the 10% and 5% levels, respectively.

Table 7. Heterogeneity in the Effect of Manager Bias on Work Performance
Dependent Variable: Articles Scanned per Minute

	A. Time During Contract		B. Fraction ZUS in the Store	
	Early Weeks	Late Weeks	Below Median	Above Median
Minority Worker ×	-0.200	-0.422**	-0.477**	-0.002
Manager Bias	(0.141)	(0.160)	(0.203)	(0.112)
Manager Bias	0.051	0.305**	0.267**	-0.102
	(0.123)	(0.115)	(0.099)	(0.168)
Observations	2,404	1,197	1,864	1,340
Dependent Variable Mean	17.88	19.82	18.64	18.39
p-value: Coefficients are equal	0.249	0.249	0.037	0.037
R-squared	0.001	0.004	0.003	0.001

Note: Each regression shows the result of regressing the dependent variable on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. The dependent variable is the number of articles per minute scanned. Observations in the first column are limited to days for which we have the early weeks (weeks 3 to 8) of the contract, while observations in the second column are limited to days for which we have the late weeks (weeks 18 to 23) of the contract. Observations in the third column are limited to stores in which managers reported relatively few workers from ZUS (below the median in our sample), while the final column includes the remaining stores. Observations are worker-days and standard errors are clustered at the store level. ** denotes significance at the 5% level.

Table 8. Worker-Manager Affection and Task Assignment

	A. Worker-Manager Affection			
	Manager Liked You Best	Manager Most Likely to Recommend You for Promotion	You Enjoyed Working with Manager Best	Manager Initially Made You Feel Most Confident
Minority Worker ×	0.019	0.078	0.243	0.194
Manager Bias	(0.246)	(0.212)	(0.234)	(0.196)
Manager Bias	0.152	0.251*	-0.061	0.134
	(0.131)	(0.148)	(0.162)	(0.127)
Observations	3,036	2,862	3,209	3,189
Dependent Variable Mean	3.991	4.053	4.062	4.073
R-squared	0.015	0.042	0.010	0.026

	B. Task Assignment			
	Manager Assigned to Preferred Register Type	Manager Assigned Best Breaks	Management of Lines and Customer Flows Encouraged Performance	Manager Assigned to Fewest Cleaning Duties
Minority Worker ×	-0.035	0.146	-0.153	0.673***
Manager Bias	(0.391)	(0.469)	(0.308)	(0.189)
Manager Bias	0.021	-0.083	0.129	-0.276
	(0.157)	(0.146)	(0.137)	(0.182)
Observations	2,288	2,553	2,864	2,235
Dependent Variable Mean	4.010	3.922	4.215	3.373
R-squared	0.002	0.008	0.018	0.045

Note: Each column in each panel shows the result of regressing the dependent variable on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. The dependent variable is the worker's ranking of the manager on the question indicated by the column heading. This ranking ranges from 1 (the lowest ranked manager) to N (the highest ranked manager), where N is the number of managers the worker had. Observations are worker-days and standard errors are clustered at the store level. *, *** denote significance at the 10% and 1% levels, respectively.

Table 9. Worker-Manager Interaction

Panel A. Effect of Worker-Manager Interaction on Performance

Dependent Variable: Articles Scanned per Minute

Remembers Manager	1.510**		1.587**	2.053***
(Indicator)	(0.635)		(0.630)	(0.744)
Fraction of Time Scheduled		-1.172	1.724	4.021
with Manager		(1.352)	(3.638)	(3.828)
(Fraction of Time Scheduled			-4.454	-6.603
with Manager)^2			(4.886)	(5.407)
Individual F.E.'s	Yes	Yes	Yes	Yes
Manager F.E.'s	No	No	No	Yes
Observations	1,885	1,885	1,885	1,885
Dependent Variable Mean	18.42	18.42	18.42	18.42
R-squared	0.008	0.001	0.010	0.095

Panel B. Minority Status, Manager Bias, and Worker-Manager Interaction

	Dependent Variable: Remembers Manager (Indicator)		Dependent Variable: Articles Scanned per Minute	
	All Days		All Days	Days where Worker Remembers Manager
Minority Worker ×	-0.0152*		-0.415*	-0.311
Manager Bias	(0.0086)		(0.209)	(0.314)
Manager Bias	0.0190*		0.271**	0.203**
	(0.0097)		(0.114)	(0.095)
Fraction of Time Scheduled	0.6362*		-1.932	-5.115
with Manager	(0.3351)		(4.159)	(4.161)
(Fraction of Time Scheduled	-0.5605		1.017	4.114
with Manager)^2	(0.3981)		(6.270)	(5.757)
Individual F.E.'s	Yes		Yes	Yes
Observations	3,958		1,584	1,317
Dependent Variable Mean	0.932		18.52	18.66
R-squared	0.017		0.006	0.005

Note: Each regression in Panel A shows the results of regressing articles scanned per minute on the variables listed in the left-most column, controlling for worker fixed effects. *Remembers Manager* is an indicator for the worker reporting in the worker survey that she remembered the manager she was scheduled to work with that day. *Fraction of Time Scheduled with Manager* is a number between 0 and 1. It is the fraction of the worker's time in the administrative data that she was scheduled to work with the given manager, averaged over all working days. The first column of Panel B regresses an indicator for whether the worker remembered the manager on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score, the fraction of time in the administrative data the worker spent with the manager, this fraction squared, and worker fixed effects. The next column in the panel regresses articles per minute scanned on these same variables. The final column in the panel replicates the previous column, but eliminates days where the worker did not remember the manager. Throughout, observations are worker-days and standard errors are clustered at the store level. *, **, *** denote significance at the 10%, 5%, and 1% levels respectively.

Table 10. Comparison of Minority and Non-Minority Performance

|	Absence Indicator	Minutes Worked in Excess of Schedule	Articles Scanned per Minute	Inter-Customer Time (Seconds)	Estimated Customers Served per Day
			A. All Days		
Minority Worker	-0.0041	0.522	0.282	0.504	2.80
	(0.0072)	(2.213)	(0.329)	(0.719)	(2.02)
Non-Minority Mean	0.0187	-1.186	18.55	28.21	162
Observations	4,371	4,163	3,601	3,287	3,086
Store F.E.'s	Yes	Yes	Yes	Yes	Yes
			B. Days with Unbiased Managers		
Minority Worker	-0.0127*	2.572	0.745**	-2.075*	13.94**
	(0.0067)	(2.331)	(0.323)	(1.113)	(4.84)
Non-Minority Mean	0.0267	-4.268	18.65	26.59	162
Observations	482	444	367	330	301
Store F.E.'s	Yes	Yes	Yes	Yes	Yes
			C. Days with Biased Managers		
Minority Worker	-0.0047	0.271	0.006	0.936	2.21
	(0.0094)	(2.872)	(0.383)	(0.935)	(2.68)
Non-Minority Mean	0.0194	-1.106	18.65	27.94	162
Observations	3,474	3,319	2,832	2,555	2,395
Store F.E.'s	Yes	Yes	Yes	Yes	Yes
			D. All Other Days		
Minority Worker	0.0026	0.379	1.292**	0.178	-0.25
	(0.0027)	(1.625)	(0.325)	(0.186)	(2.05)
Non-Minority Mean	0.0036	0.928	17.69	31.88	156
Observations	445	429	422	421	410
Store F.E.'s	Yes	Yes	Yes	Yes	Yes

Note: Each column in each panel shows the result of a separate regression of the dependent variable indicated by the column on an indicator for the worker being a minority, controlling for store fixed effects. *Estimated Customers Served per Day* is calculated under the assumption that customers average 25 items. Standard errors are clustered at the store level. *Days with Unbiased Managers* are days where the worker spent at least 50% of the day with managers with a raw (unscaled) IAT score between -0.15 and 0.15. *Days with Biased Managers* are days where the worker spent more than 50% of the day with managers whose raw IAT score exceeds 0.15. Days where a worker spent more than 50% of her time with managers biased in favor of minorities (managers with raw IAT scores below -0.15) and days where a worker did not spend more than 50% of her time with managers in any bias category are included in Panel D as "All Other Days." *, ** denote significance at the 10% and 5% levels, respectively.

Table 11. Effect of Manager Bias on Performance in Rest of the Week
Dependent Variable: Average Performance in Rest of the Week

	Absence Indicator	Minutes Worked in Excess of Schedule	Articles Scanned per Minute	Inter-Customer Time (Seconds)
Minority Worker × Manager Bias	0.0023	-0.628	-0.099**	-0.336
	(0.0020)	(0.940)	(0.041)	(0.274)
Manager Bias	-0.0029	1.185*	0.063	-0.030
	(0.0017)	(0.638)	(0.046)	(0.203)
Observations	4,271	4,174	3,935	3,610
Dependent Variable Mean	0.0153	-0.053	18.43	29.04
R-squared	0.0010	0.0058	0.0061	0.0026

Notes: Each column shows the result of regressing the workers' average performance in the rest of the week on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms) on a given day. Regressions control for the manager's IAT score on that day and worker fixed effects. We also control for the average manager IAT score in the rest of the week and this score interacted with the worker's minority status. Standard errors are clustered at the store level. ** denotes significance at the 5% level.

Appendix Figure 1. Effect of Manager Bias on Overtime

Effect on Staying at Least the Given Number of Minutes after Shift End

Note: Regressions control for date and time of day fixed effects.

45
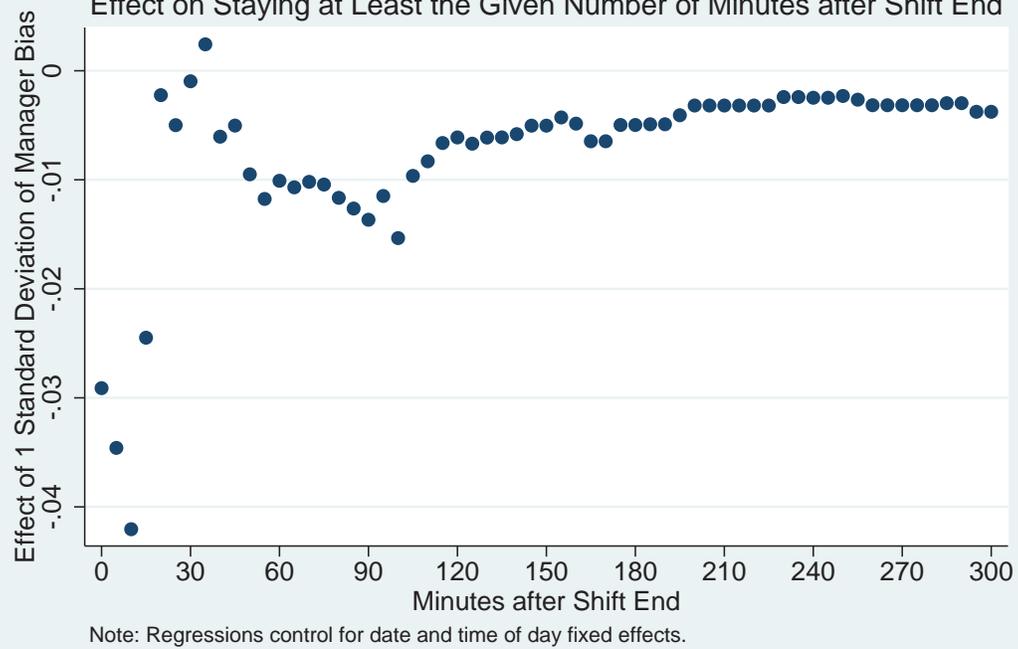
Appendix Table 1. Characteristics of Respondents and Non-Respondents to the CP Survey

	All Workers			Minority Workers			Majority Workers		
	Respondents	Non-Respondents	p-value of Difference	Respondents	Non-Respondents	p-value of Difference	Respondents	Non-Respondents	p-value of Difference
Male	7.7%	8.1%	0.855	6.7%	6.8%	0.994	8.1%	9.0%	0.743
Absence Rate	0.018	0.028	0.423	0.016	0.006	0.364	0.016	0.037	0.235
Minutes Worked in Excess of Schedule	2.59	-2.51	0.064	2.92	1.29	0.765	2.51	-4.58	0.031
Articles Scanned per Minute	18.57	18.43	0.699	18.84	18.20	0.298	18.51	18.56	0.919
Inter-Customer Time (Seconds)	28.51	29.50	0.420	27.94	31.24	0.130	28.65	28.52	0.933
Payment Time (Seconds)	50.51	50.73	0.768	51.83	52.13	0.823	50.17	50.02	0.868
Paris Region	42%	49%	0.095	63%	59%	0.585	33%	41%	0.103
Municipality has Less than 25,000 Residents	33%	29%	0.330	28%	24%	0.544	35%	33%	0.639
Municipality has 25,000 to 75,000 Residents	49%	52%	0.435	54%	54%	0.984	47%	50%	0.457
Municipality has More than 75,000 Residents	18%	19%	0.877	18%	21%	0.524	19%	17%	0.696

Notes: The *Paris Region or* "Ile-de-France" is one of the 13 administrative regions in France. Municipality population data comes from 2013 Census data. P-values are calculated from t-tests.

Appendix Table 2. Correlates of Manager IAT Scores
Dependent Variable: Standardized Manager IAT Score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minority	-0.441						-0.364	-0.135
	(0.345)						(0.388)	(0.445)
Male		-0.078					0.109	0.092
		(0.448)					(0.617)	(0.675)
Age			0.008				0.008	0.003
			(0.010)				(0.012)	(0.018)
Level 4 (High Position)				0.019			-0.093	0.329
				(0.266)			(0.290)	(0.366)
Fraction ZUS in Store					-0.005		-0.005	
					(0.004)		(0.007)	
Far Right Vote Share						0.005	-0.006	
						(0.016)	(0.016)	
Observations	119	119	119	119	110	119	110	119
R-squared	0.014	0.000	0.005	0.000	0.003	0.001	0.021	0.269
Dependent Variable Mean	1.346	1.346	1.346	1.346	1.410	1.346	1.410	1.346
Store F.E.'s	No	No	No	No	No	No	No	Yes

Note: Each column shows the results of regressing a manager's (standardized) IAT score on her characteristics. Level 4 managers have a higher position in the store than the remaining managers. Manager age is reported as of January 1, 2012. *Fraction ZUS in Store* is the fraction of workers that come from "sensitive urban zones," zones with high concentrations of immigrants and first generation citizens, and is measured on a scale of 1 to 100. *Far Right Vote Share* is the share of votes received by the Front National Party in the first round of the 2012 presidential election. This data comes from the French Ministry of the Interior. Standard errors are clustered at the store level.

Appendix Table 3. Exogeneity of Scheduled Shifts
Robustness to Alternative Specifications

	Manager Bias	Minority Manager	Male Manager	Level 4 Manager	Total Managers	Articles per Minute in Other Stores on that Date	Shift Includes Early Morning	Shift Includes Late Evening	Total Hours	Split Shift
					A. Minority Workers, Including Observations with No Manager IAT					
Minority Worker	0.005	-0.009	-0.020	-0.008	-0.127	0.043	0.008	0.014	0.034	-0.001
	(0.022)	(0.007)	(0.014)	(0.010)	(0.115)	(0.072)	(0.013)	(0.012)	(0.029)	(0.010)
Observations	4,371	5,099	5,099	5,099	5,099	4,945	5,099	5,099	5,094	5,099
Dependent Variable Mean	1.13	0.051	0.116	0.156	2.44	18.28	0.141	0.581	7.20	0.461
Store F.E.'s	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
					B. Minority Workers and Manager Bias, with Worker Fixed Effects					
Minority Worker × Manager Bias		0.034	0.024	0.031	-0.059	-0.057	-0.013	0.016	-0.077	-0.027
		(0.024)	(0.024)	(0.037)	(0.050)	(0.064)	(0.021)	(0.025)	(0.110)	(0.031)
Manager Bias		-0.040	0.007	0.030	0.019	0.065	0.006	-0.015	-0.045	-0.013
		(0.026)	(0.023)	(0.039)	(0.052)	(0.055)	(0.013)	(0.023)	(0.067)	(0.024)
Observations		4,371	4,371	4,371	4,371	4,238	4,371	4,371	4,368	4,371
Dependent Variable Mean		0.060	0.114	0.171	2.74	18.23	0.141	0.580	7.22	0.465
Individual F.E.'s		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Panel A replicates Panel A of Table 3, including observations where we do not have the manager's IAT score. Panel B replicates Panel B of Table 3, replacing the store fixed effects and minority worker indicator with worker fixed effects. That is, Panel B shows the results of regressing the dependent variable indicated by the column on the manager's IAT score (in standard deviation terms) and the interaction of manager's IAT score and the minority worker indicator, controlling for worker fixed effects.

Appendix Table 4. Exogeneity of CP Coworkers

	Scheduled to Work at Same Time	Minutes Scheduled to Work Together
Minority-Minority Pair	-0.015	-6.10
	(0.036)	(11.66)
Minority-Majority Pair	-0.014	-5.73
	(0.022)	(7.26)
Store F.E.'s	Yes	Yes
Observations	15,791	15,791
Mean Dep. Var.	0.594	186.7

Note: The table shows the result of regressing an indicator for whether two CPs in the same store were scheduled to work together on a given day (Column 1) and the number of minutes they were scheduled to work together on a given day (Column 2) on an indicator for both CPs being minorities and an indicator for one worker being a minority and the other being a majority. The omitted category is both workers being majorities. Observations are CP pair-days. Store fixed effects are included and standard errors are clustered at the store level.

Title: Appendix Table 5. Effect of Manager Bias on Payment Time
Subtitle: Dependent Variable: Payment Time (Seconds)

Columns: 4 columns (1-4)

Rows:
- Minority Worker × Manager Bias: -0.188, -0.091, -0.064, -0.011
  - (0.457), (0.413), (0.361), (0.341)
- Manager Bias: 0.046, 0.049, -0.453, -0.506*
  - (0.314), (0.281), (0.325), (0.290)
- Observations: 3,108 each
- Dependent Variable Mean: 50.77 each
- R-squared: 0.000, 0.039, 0.159, 0.159
- Individual F.E.'s: Yes Yes Yes Yes
- Day of the Week F.E.'s: No Yes No No
- Morning/Evening F.E.'s: No Yes Yes Yes
- Date F.E.'s: No No Yes Yes
- Manager Minority Variables: No No No Yes## Appendix Table 5. Effect of Manager Bias on Payment Time
Dependent Variable: Payment Time (Seconds)

	(1)	(2)	(3)	(4)
Minority Worker × Manager Bias	-0.188	-0.091	-0.064	-0.011
	(0.457)	(0.413)	(0.361)	(0.341)
Manager Bias	0.046	0.049	-0.453	-0.506*
	(0.314)	(0.281)	(0.325)	(0.290)
Observations	3,108	3,108	3,108	3,108
Dependent Variable Mean	50.77	50.77	50.77	50.77
R-squared	0.000	0.039	0.159	0.159
Individual F.E.'s	Yes	Yes	Yes	Yes
Day of the Week F.E.'s	No	Yes	No	No
Morning/Evening F.E.'s	No	Yes	Yes	Yes
Date F.E.'s	No	No	Yes	Yes
Manager Minority Variables	No	No	No	Yes

Note: Each regression shows the result of regressing the dependent variable on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. The first column includes no controls. The second column adds day of the week fixed effects, an indicator for the shift starting at 9 am or earlier, and an indicator for the shift ending at 8 pm or later. The third column includes date fixed effects and drops the day of the week fixed effects. The last column adds a dummy for the manager being a minority and the interaction of the worker's and the manager's minority status. Observations are worker-days and standard errors are clustered at the store level. * denotes significance at the 10% level.

Appendix Table 6. Effect of Manager Bias on Time at Work and Work Performance
Including Controls for Other Manager Characteristics

	Absence Indicator	Minutes Worked in Excess of Schedule	Articles Scanned per Minute	Inter-Customer Time (Seconds)
Minority Worker × Manager Bias	0.0139**	-2.101	-0.277**	1.523**
	(0.0058)	(1.639)	(0.123)	(0.743)
Manager Bias	-0.0064	1.007	0.1011	-0.269
	(0.0043)	(1.082)	(0.078)	(0.428)
Observations	4,371	4,163	3,601	3,287
Dependent Variable Mean	0.0162	-0.068	18.53	28.70
R-squared	0.088	0.131	0.196	0.241

Note: The regressions in this table replicate the regressions in the final columns of Table 4A, 4B, 6A, and 6B, respectively, adding additional control variables. The regressions include individual and date fixed effects, dummies for early morning and late evening shifts, an indicator for manager minority status, and the interaction of the worker's and manager's minority status. The regressions also include a dummy for the manager having a Level 4 position, a dummy for the manager being male, manager age as of January 1, 2012, and the interaction of each of these variables with the worker's minority status. ** denotes significance at the 5% level.

Appendix Table 7. Effect of Manager Bias on Time at Work and Work Performance
Different Definitions of Minority Status

	Absence Indicator	Minutes Worked in Excess of Schedule	Articles Scanned per Minute	Inter-Customer Time (Seconds)
A. Minorities as Workers with North African Names				
Minority Worker ×	0.0150**	-2.437	-0.228	1.305
Manager Bias	(0.0060)	(1.791)	(0.153)	(0.890)
Manager Bias	-0.0053	1.238	0.075	-0.516
	(0.0039)	(0.934)	(0.065)	(0.503)
Observations	3,994	3,795	3,277	3,012
Dependent Variable Mean	0.0168	-0.725	18.51	28.46
R-squared	0.091	0.141	0.206	0.237
B. Minorities as Workers with Sub-Saharan African Names				
Minority Worker ×	0.0082*	-6.010	-0.225	1.506*
Manager Bias	(0.0044)	(3.786)	(0.138)	(0.854)
Manager Bias	-0.0043	0.982	0.067	-0.701
	(0.0038)	(1.001)	(0.062)	(0.545)
Observations	3,561	3,380	2,906	2,670
Dependent Variable Mean	0.0177	-0.346	18.59	28.47
R-squared	0.100	0.131	0.217	0.249
C. Workers of Indeterminate, Mixed, or Other Origin Excluded				
Minority Worker ×	0.0116**	-3.166*	-0.181**	1.282*
Manager Bias	(0.0053)	(1.755)	(0.076)	(0.627)
Manager Bias	-0.0052	0.812	0.030	-0.565
	(0.0045)	(0.984)	(0.064)	(0.465)
Observations	4,000	3,824	3,301	3,033
Dependent Variable Mean	0.0173	-0.020	18.61	28.69
R-squared	0.093	0.139	0.231	0.235

Note: The regressions in this table replicate the regressions in the final columns of Table 4A, 4B, 6A, and 6B, respectively. Regressions in Panel A define as minorities workers with a first or last name of North African origin. Remaining workers with a Sub-Saharan African first or last name are eliminated. Regressions in Panel B define as minorities workers with a first or last name of Sub-Saharan African origin, eliminating other workers with North African names. Regressions in Panel C use the original definition of minority (a first or last name of Sub-Saharan or North African origin), but eliminate workers with names of indeterminate, mixed, or other origin. *, ** denote significance at the 10% and 5% levels, respectively.

Appendix Table 8. Effect of Manager Bias on Time at Work and Work Performance
Controlling for Within-Store Shift Effects

	Absence Indicator	Minutes Worked in Excess of Schedule	Articles Scanned per Minute	Inter-Customer Time (Seconds)
Minority Worker × Manager Bias	0.0139***	-3.366*	-0.276**	1.326*
	(0.0046)	(1.871)	(0.128)	(0.755)
Manager Bias	-0.0086	1.062	0.022	-0.699
	(0.0057)	(1.568)	(0.098)	(0.547)
Observations	4,371	3,221	3,601	3,287
Dependent Variable Mean	0.016	0.509	18.530	28.700
R-squared	0.227	0.423	0.382	0.393

Note: The regressions in this table replicate the regressions in the second-to-last columns of Table 4A, 4B, 6A, and 6B, respectively. These regressions add controls for the shift (day of the week × morning or evening) within each store separately . *, **,*** denote significance at the 10%, 5%, and 1% levels, respectively.

Appendix Table 9. Comparing Observations by Time During the Contract and Store Diversity

	A. Time During Contract			B. Fraction ZUS in the Store		
	Early Weeks	Late Weeks	p-value of Difference	Below Median	Above Median	p-value of Difference
	(1)	(2)	(3)	(4)	(5)	(6)
Minority Worker	0.273	0.292	0.764	0.179	0.410	0.000
Male Worker	0.078	0.056	0.533	0.047	0.115	0.085
Minority Manager	0.055	0.059	0.906	0.040	0.089	0.242
Male Manager	0.110	0.118	0.864	0.071	0.178	0.052
Level 4 Manager	0.174	0.167	0.883	0.192	0.133	0.393
Manager Age	40.9	41.4	0.742	42.5	37.2	0.001
Manager IAT Score	1.28	1.44	0.315	1.44	1.35	0.640
Fraction ZUS in Store	0.166	0.176	0.458	0.108	0.255	0.000

Note: Cells in Column 1 report the mean of the indicated characteristic for the promotions for which we have data on the early weeks (weeks 3 to 8) of the contract. Cells in Column 2 report the mean of the indicated characteristic for the promotions for which we have data on the late weeks (weeks 18 to 23) of the contract. Column 3 presents the p-values from a test of the hypothesis that the means of both samples are the same. Cells in Column 4 report the mean of the indicated characteristic for stores in which managers report they managed relatively few workers from ZUS (below the median in our sample), while cells in Column 5 report means for the remaining stores. Column 6 reports p-values from a test of the hypothesis that the means of both samples are the same.

Appendix Table 10. Effect of Manager Bias Over Different Levels of Time Aggregation

| | Level of Time Aggregation | | | |
	One Day	Two Working Days	One Calendar Week	Two Calendar Weeks
	A. Absences			
Minority Worker ×	0.0098**	0.0021	0.0091	0.0115
Manager Bias	(0.0039)	(0.0043)	(0.0106)	(0.0245)
Manager Bias	-0.0021	0.0008	-0.0051	-0.0047
	(0.0031)	(0.0037)	(0.0098)	(0.0223)
Observations	4,371	2,386	1,209	651
Dependent Variable Mean	0.0162	0.0176	0.0226	0.0252
R-squared	0.0005	0.0001	0.0004	0.0004
	B. Articles Scanned per Minute			
Minority Worker ×	-0.276**	-0.305***	-0.508***	-0.604
Manager Bias	(0.109)	(0.092)	(0.180)	(0.361)
Manager Bias	0.140*	0.221*	0.400**	0.716**
	(0.083)	(0.124)	(0.159)	(0.341)
Observations	3,601	2,149	1,111	605
Dependent Variable Mean	18.53	18.46	18.59	18.60
R-squared	0.0015	0.0034	0.0130	0.0316
Individual F.E.'s	Yes	Yes	Yes	Yes

Note: Each column in each panel shows the results of regressing the dependent variable on the interaction of the worker's minority status and the manager's IAT score (in standard deviation terms), controlling for the manager's IAT score and worker fixed effects. No other controls are included. The first column reproduces results from Tables 4A and 6A, respectively. The dependent variable is an indicator for the worker being absent (Panel A) and the number of articles per minute scanned (Panel B). The remaining columns aggregate observations over longer time periods. In these regressions, both manager bias and the dependent variables are averaged (by worker) over the relevant time frame, so that the absence indicator is no longer an indicator, but a rate between 0 and 1. In the second column, the time span is two consecutive working days, so that observations are worker-two day periods. (If the data include an odd number of days for a given worker, one observation for the worker is a worker-one day period.) In the third column, the time span is a calendar week (typically four working days), and in the last column the time span is two calendar weeks. Standard errors are clustered at the store level. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.