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Abstract

Reference-dependent decision-making – the core of behavioral economics’ prospect theory – makes people more likely to choose an outcome that they expect to receive. Reference-dependence therefore may imply the perpetuation of disadvantage: people who do not expect an opportunity may be less likely to “seize the day” if one unexpectedly arrives. We find evidence of this possibility in labor supply decision-making in two datasets about a high-unemployment part of Cape Town, South Africa, including a panel. People with low expectations for finding a job – that is, people who expect to be unemployed – are less likely to report accepting several hypothetical job offers. This result is robust to a range of respecifications, including adding a range of control variables for desire and ability to work, including reservation wages. The finding appears to arise according to the theorized mechanisms. To our knowledge, this is the first indication of reference-dependent labor supply in a developing country, where especially low expectations could have particularly important consequences.

KEYWORDS: reference-dependent preferences, labor supply, behavioral economics, poverty, prospect theory, Cape Town, South Africa

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“Do you consider all this desirable? No, I don’t. But it may be that the psychological adjustment which the working class is visibly making is the best they could make in the circumstances. They have neither turned revolutionary nor lost their self respect; merely they have kept their tempers and settled down to make the best of things on a fish-and-chips standard. The alternative would be God knows what continued agonies of despair” (Orwell 1937).

Introduction

Inequality and unemployment remain profound in South Africa.¹ Inspired by psychology’s prospect theory, we consider the effect of pessimism and low expectations on employment decisions in the Cape Flats area of Cape Town, South Africa. Might people come to value what they expect to receive, and therefore become less likely to take advantage of an unexpected opportunity? In particular, might somebody who expected to be unemployed become more attached to aspects of that lifestyle and livelihood?

Reference-dependent decision making

Prospect theory—a prominent psychological theory of decision making under uncertainty²—has had a large effect on behavioral economics. Kahneman and Tversky’s experiments and theory were early departures from expected utility theory and became foundations for a subfield. Since then, prospect theory has been documented “in the field” in a range of economic contexts—from finance, to consumer choice, to labor supply.³

Recently, Köszegi and Rabin⁴ offered a mathematical updating of prospect theory. They focus on its two key features: reference dependence and loss aversion. They proposed that people choose the best option available to them *relative to a reference point*, rather than the absolutely best option, as economic theory ordinarily assumes, a decision-making procedure known as *reference dependence*. Moreover, when comparing options to reference points, people feel

¹ J. Seekings and N. Nattrass, *Class, Race, and Inequality in South Africa* (New Haven: Yale, 2005).

² D. Kahneman and A. Tversky, “Prospect Theory: An Analysis of Decision under Risk,” *Econometrica* XLVII (1979): 263-291.

³ C.F. Camerer, “Prospect Theory in the Wild: Evidence from the Field,” in *Advances in Behavioral Economics*, eds. C.F. Camerer, G. Loewenstein, and M. Rabin (Princeton: Princeton University and Russell Sage, 2004), 148-161.

⁴ B. Köszegi and M. Rabin, “A Model of Reference-Dependent Preferences,” *Quarterly Journal of Economics* 121 (4) (2006): 1133-1166.

loss aversion: we dislike the aspects of an option that fall short of the corresponding aspects of the reference option more than we like the aspects of an option that are better than the reference alternative.⁵

More precisely, Köszegi and Rabin posit that people evaluate option c , given reference option r , according to

$$u(c|r) = \sum_k \left(u_k^c + \eta \begin{cases} u_k^c - u_k^r & | u_k^c \geq u_k^r \\ \lambda(u_k^c - u_k^r) & | u_k^c < u_k^r \end{cases} \right),$$

where options have multiple dimensions, indexed k , utility is additively separable over the dimensions of options, and u_k^c is the subutility offered by option c along dimension k . Parameter $\eta > 0$ represents sensitivity to gains and losses from the reference point. Critically, the choice-utility of c depends on the value of the reference point r along each dimension: where c is better than r the difference makes c more valuable. However, along dimensions where c is worse than r , this loss is magnified by loss aversion, represented by the parameter $\lambda \geq 1$. Their model allows for individual differences—that is, some people are more loss averse than others, just like some people are more risk averse than others, or more impatient than others.

Clearly, a critical question is how the reference option r is identified. What is the yardstick against which people evaluate alternatives? Early research on prospect theory often implicitly assumed that the status quo was the reference point: people valued improvements and disliked losses. Köszegi and Rabin's theoretical framework identified reference points as game-theoretic equilibria: in their model, a personal equilibrium is a reference point that satisfies the condition that people would indeed expect to choose it, if it were the reference point. Recent lab experiments have clarified that reference points are often what people expect to receive. For example, Ericson and Fuster⁶ found that student experiment participants were more likely to trade away a mug for a pen, if given the chance, when they believed that they were probably going to be given the opportunity to trade than when they believed that they were not.

Reference dependence, labor supply, and the perpetuation of disadvantage

A growing range of papers studying lab experiments and labor markets in developed countries have documented reference-dependent preferences and loss

⁵ Loss aversion is conceptually distinct from other psychological preferences, such as risk aversion. Loss aversion, a distinguishing feature of models of reference-dependent preferences, is responding more about losses relative to a reference point than about gains. Risk aversion is a preference for more certainty (such as when buying insurance).

⁶ K.M. Ericson and A. Fuster, *Expectations as Endowments: Evidence on Reference-Dependent Preferences from Exchange and Valuation Experiments* (Harvard, 2010).

aversion influencing labor supply.⁷ A common conclusion is that people with daily earning targets might quit work on days when they fulfill their expectations early, forgoing the rewards of a high marginal product of labor.⁸ Most relevantly for this research, in a recent lab experiment on undergraduate students, Abeler et al.⁹ find that “if expectations are high, subjects work longer and earn more money than if expectations are low.” However, to our knowledge none of this literature has studied developing countries or very poor people, where the effects of extremely low expectations could importantly discourage selecting valuable options.¹⁰

One implication of reference dependence is that people who expect an outcome—even an outcome that is not very good overall—may be unlikely to exchange their expected outcome for something better if given an unexpected opportunity to switch. This would occur if people’s expectations indeed become their reference points.¹¹ If so, given loss aversion, people would pay more attention to the dimensions along which an option is not as good as what they expect than they would to the ways in which an option is better than what they expect. For example, a student who is unexpectedly admitted off the waiting list to a top college might nevertheless attend the moderately ranked school where she had been expecting to enroll, even if she would have chosen to go to the higher-ranked college if she had originally expected admission there.

In a world with reference dependence, disadvantage could be even more self-perpetuating. People who expect opportunities will take high status and achievement as a reference point and take advantage of opportunities when they come. People whose experience or examples led them not to expect opportunities will learn to value the life they expect, and therefore may be less eager to sacrifice the good aspects of that life (including, perhaps, the good aspects of a life outside of formal employment) by exchanging it for another, if an unexpected opportunity happens to come. To be clear, because people of all types—rich and poor—

⁷ L. Goette, D. Huffman and E. Fehr, “Loss Aversion and Labor Supply,” *Journal of the European Economic Association* 2 (2–3) (2004): 216–228.

⁸ E. Fehr and L. Goette, “Do Workers Work more if Wages are High? Evidence from a Randomized Field Experiment,” *American Economic Review* 97 (1) (2007): 298–317.

⁹ J. Abeler, et al., “Reference Points and Effort Provision,” *American Economic Review* 101 (2) (2011): 470–492.

¹⁰ In particular, a series of high-profile papers has debated the reference-dependent labor supply of New York City taxi cab drivers (C. Camerer, L. Babcock, G. Loewenstein and R. Thaler, “Labor Supply of New York City Cabdrivers: One Day at a Time,” *Quarterly Journal of Economics* 112 (2) (1997): 407–441; H.S. Farber, “Reference-Dependent Preferences and Labor Supply: The Case of New York City Taxi Drivers,” *American Economic Review* 98 (3) (2008): 1069–1082; V.P. Crawford and J. Meng, “New York City Cabdrivers’ Labor Supply Revisited: Reference-Dependent Preferences with Rational-Expectations Targets for Hours and Income,” *American Economic Review* (Forthcoming)).

¹¹ Ericson and Fuster, *Expectations as Endowments*.

exhibit psychological tendencies like reference dependence, the point is not that only reference-dependent people become poor. Just the opposite: reference dependence could perpetuate existing disadvantage because *anybody* who is loss averse might be less likely to pursue an opportunity that they have learned not to expect.

Research strategy and data

Are people who do not expect to have a lifestyle-changing opportunity less likely to “seize the day” if one unexpectedly comes? We will investigate this question by applying it to employment decisions using two datasets: the Khayelitsha/Mitchell’s Plan Survey (KMPS) and the Cape Area Panel Study (CAPS). How does decision making differ between job-seekers who expect to find work, on the one hand, and those who expect to remain unemployed, on the other? Do expectations influence whether somebody would exchange unemployment—a future with potentially subjectively better and worse dimensions—for working at a particular formal job?

Both surveys asked versions of our dependent variable of interest—willingness to accept unexpected job offers—and our independent variable of interest—whether or not people looking for work expect to find it. There are good aspects of lives lived while unemployed, and people who expect to be stuck with unemployment may, as Orwell suggested, make the best of it. If so, they may be less willing than people with more optimistic expectations to accept a surprise job offer.

Khayelitsha and Mitchell’s Plan are two large “township” neighborhood areas in the Cape Flats of Cape Town, South Africa. Khayelitsha has historically been the home predominantly to Xhosa-speaking people classified as “black” under apartheid; Mitchell’s Plain has historically been the home to people who were classified as “colored.” The KMPS was collected in 2000 in a collaborative effort between the University of Cape Town and the University of Michigan.¹² KMPS, first, will allow a basic test of the association between expectations and employment decision making in a cross-sectional analysis: are people with lower expectations less likely to accept hypothetical job offers? Then, we will use the KMPS to test whether the mechanisms behind this association appear consistent

¹² “In June 1998 the Andrew W. Mellon Foundation awarded the University of Cape Town [a grant] to pursue a programme to develop post-graduate training and research in demography. The programme incorporated collaboration between the Population Studies Center and the Institute for Social Research (ISR) at the University of Michigan on the one hand and the Southern Africa Labour and Development Research Unit (SALDRU) within the School of Economics at the University of Cape Town working together with a team of UCT faculty staff on the other. A further award... was made in 2001” (see SALDRU/Centre for Social Science Research, *Khayelitsha/Mitchell’s Plain Survey* (University of Cape Town, 2000)).

with the theory of reference-dependence: do low expectations influence attitudes towards unemployment, and is the effect of expectations strongest among more loss-averse people?

Four longitudinal waves of the CAPS are available from the University of Cape Town.¹³ CAPS will enable a more careful analysis of the causal impact of expectations on job decisions. In particular, CAPS' panel structure allows us to identify the effect of changes, automatically controlling for fixed differences among survey respondents. Additionally, CAPS will allow us to control for a wide range of covariates, including respondents' reservation wages, an indicator of how badly respondents want work. Therefore, the two strategies will complement each other: KMPS will help document the mechanism, while CAPS will target causality.

Cross-Sectional Analysis: The Khayelitsha–Mitchell's Plain Survey

Empirical strategy and variables

Are unemployed people who want a job less likely to accept an unexpected offer if they did not believe they were going to have the opportunity? Using the cross-sectional Khayelitsha–Mitchell's Plain Survey, we can compare job seekers with lower expectations to those with higher expectations.

The independent variable of interest is a survey respondent's expectations about finding a job. The KMPS asked each respondent "Do you think there is a realistic possibility that you will get a job in the next month?" This question was repeated for four time periods: within a month, within three months, within six months, and within a year. These questions therefore sort participants into deeper levels of pessimism.

The dependent variable of interest is willingness to accept an offered job—trading the respondent's current lifestyle for another. While the KMPS did not actually offer participants jobs, it did ask whether participants would accept a range of hypothetical jobs. The survey asked: "Imagine that an industrial park opened up nearby. Would you accept any of the following jobs at the following (pre-tax) rates of pay (if you were unemployed at the time)," and then described five hypothetical offers, such as "a cleaner with a monthly wage of R1081" and "a

¹³ "The Cape Area Panel Study Waves 1-2-3 were collected between 2002 and 2005 by the University of Cape Town and the University of Michigan, with funding provided by the US National Institute for Child Health and Human Development and the Andrew W. Mellon Foundation. Wave 4 was collected in 2006 by the University of Cape Town, University of Michigan, and Princeton University. Major funding for Wave 4 was provided by the National Institute on Aging through a grant to Princeton University, in addition to funding provided by NICHD through the University of Michigan" (Lam et al., *Cape Area Panel Study: A Very Short Introduction to the Integrated Waves 1-2-3-4 Data*. [The University of Cape Town, 2008.]).

machine operator with a monthly wage of R1619?” These questions were in a separate part of the survey from the expectations questions, so they are unlikely to have influenced one another.

Table 1: Khayelitsha–Mitchell’s Plan summary statistics

	Mean	Standard deviation
<i>Low expectations</i>		
Not within one month	0.46	0.50
Not within three months	0.31	0.46
Not within six months	0.24	0.43
Not within one year	0.18	0.38
<i>Hypothetical job acceptance</i>		
Cleaner with a monthly wage of R1081	0.91	0.29
General worker with a monthly wage of R1438	0.94	0.25
Machine operator with a monthly wage of R1619	0.91	0.29
Public works program (“for a few days”) daily wage of R33	0.65	0.48
Public works program (“for as long as possible”) daily wage of R33	0.50	0.50
Age (min = 18; max = 59)	30.56	10.28
Male	0.36	0.48
African	0.81	0.39
Ever school	0.96	0.20
In school	0.10	0.30
<i>n</i>	1,050	

The sample is restricted to 1,050 respondents who were unemployed and answered “yes” to the question “Do you want a job (whether full or part-time wage employment or self-employment)?” Only respondents younger than 60 years are included; this was the threshold for women’s eligibility for the State Old Age Pension at the time (Van Zyl 2003). Table 1 presents summary statistics. Around a quarter to a third of these job-seekers reported low expectations; averaged over all five jobs, the respondents reported accepting about 90 percent

of the hypothetical offers. They had an average age of 30 years, and just over four-fifths were “black,” rather than “colored.”

The central statistical question is whether respondents with low expectations were less likely to accept the hypothetical jobs. Therefore, we estimate

$$accept_{ij} = \alpha_j + \beta lowexpectations_i + \theta X_i + \varepsilon_{ij},$$

where i indexes respondents and j indexes jobs, *accept* is an indicator for person i accepting job j , and α_j are job-specific fixed effects. The linear probability regression will be estimated four times, once for each indicator of low expectations, and *low expectations* is an indicator for respondent i reporting that she does not expect to find a job in the stated time period. Linear probability models, rather than logit models, are used throughout this analysis not only because they are consistent under weaker distributional assumptions,¹⁴ but also because they allow traditional fixed effects.

If low expectations are associated with a lower probability of accepting unexpected opportunities then we will find $\beta < 0$, our primary hypothesis. Identifying β as the causal effect of low expectations depends on the *conditional independence assumption*: controlling for a vector of covariates, X_i , the residual determinants of job acceptance ε_{ij} are uncorrelated with low expectations. A key concern in this case is that ε_{ij} might include a respondent’s demand for a job, including how hard she is willing to search for a job. While the longitudinal CAPS data will better be able to address this concern, using the KMPS data we can control for likely correlates of job demand: an indicator for being male, age (as a quadratic), and indicators for being “African,” having ever been to school, currently being in school, having a health problem, never having had a health problem, and ever having been pregnant or made somebody pregnant.

¹⁴ J.D. Angrist and J.-S. Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion* (Princeton: Princeton University Press, 2009).

Cross-sectional results

Table 2: Low expectations and accepting hypothetical jobs in KMPS

	(1)	(2)	(3)	(4)
No job in:	One month	Three months	Six months	One year
Low expectations	−0.0150* (0.00478)	−0.00415 (0.00842)	−0.0330* (0.0109)	−0.0339** (0.00861)
Male	−0.00391 (0.0159)	−0.00364 (0.0159)	−0.00548 (0.0161)	−0.00487 (0.0157)
Age (demeaned)	−0.00375 (0.00170)	−0.00389 (0.00167)	−0.00416 (0.00167)	−0.00461 (0.00168)
Age ²	0.0000461 (0.0000198)	0.0000475 (0.0000192)	0.0000526 (0.0000194)	0.0000587* (0.0000193)
African	0.102*** (0.0135)	0.103*** (0.0132)	0.105*** (0.0132)	0.104*** (0.0132)
Ever school	−0.0678 (0.0509)	−0.0662 (0.0521)	−0.0696 (0.0525)	−0.0679 (0.0515)
In school	−0.0635*** (0.00984)	−0.0623*** (0.00884)	−0.0572*** (0.00828)	−0.0596*** (0.00928)
Never health problem	0.0170*** (0.00297)	0.0180*** (0.00308)	0.0185*** (0.00307)	0.0187*** (0.00307)
No health problem	−0.0238 (0.0122)	−0.0253 (0.0122)	−0.0259 (0.0121)	−0.0263 (0.0121)
Ever pregnant	0.0332*** (0.00550)	0.0330*** (0.00535)	0.0323*** (0.00562)	0.0304*** (0.00568)
Job fixed effects	✓	✓	✓	✓
<i>c</i>	0.846*** (0.0659)	0.842*** (0.0695)	0.853*** (0.0710)	0.858*** (0.0700)
<i>n</i>	5,250	5,250	5,250	5,250

Linear probability of accepting; heteroskedasticity robust standard errors in parentheses.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 2 reports the results: consistently with our hypothesis, in general respondents with lower expectations are less likely to accept the offered jobs. For example, respondents who do not expect to find a job within a year are 3.4 percentage points less likely to accept a job, on average.

Also consistently with the theory of reference-dependent choice, lower expectations appear associated with even less job take-up, ranging from a 1.5 percentage point difference for participants who do not expect a job within one month to over 3 percentage points for six months and a year. The exception is not expecting a job within three months: while the point estimated remains negative, it is small and not statistically significant.

Reassuringly, covariates controlling for demand for a job behave generally as expected. At any given level of expectations, African respondents (members of a group that is poorer, on average) are more likely to accept jobs than colored respondents, and healthier respondents are more likely to accept work. Being in school is associated with less job acceptance, which could reflect an “incarceration effect” of spending time at school (that is, school attendance itself reduces available time) or heterogeneity in respondents’ abilities.

Verifying the theorized mechanism

If reference-dependent decisions are, in fact, the mechanism linking low expectations to the lower job acceptance documented in Table 2, then other evidence should be consistent with this theory. The KMPS data allow two tests of ancillary implications. First, if low expectations increased respondents’ attachment to being unemployed relative to being employed, low expectations should be correlated with these values. Second, if low expectations matter because of loss aversion, the effect of low expectations should be greatest for the most loss-averse respondents. Loss-averse people would be those who would be most reluctant to give up the lives that their low expectations had encouraged them to value. This section tests for these indicators of the mechanism, using the same data on unemployed respondents who report wanting work.

The KMPS asks two opinion questions that measure respondents’ attachment to and views of unemployed life. On a scale of 1–5—strongly disagree to strongly agree—the KMPS asked “how much do you agree/disagree with each of the following statements.” We focus on two of these: “I get bored with nothing to do all day” and “It is not so bad being out of work because other people support me.” We interpret disagreement with the first statement and agreement with the second as evidence of attachment to expected unemployment.

In particular, we estimate ordered logit models

$$agree_i^* = \alpha_k + \beta lowexpectations_i + \theta X_i + \varepsilon_i,$$

where *agree** is an ordered logit latent-dependent variable, α_k are cut-points for the discrete responses, and X_i are the same control variables used before. Table 3 summarizes the results. As before, we estimate the apparent effect of low expectations with and without controls, and at multiple levels of pessimism. In all cases the coefficients have the predicted sign, and in most cases they are statistically significant. Participants who have come to expect to be unemployed for a longer time are less likely to call unemployment boring and are more likely to report that it is not so bad. In no case do the controls substantially change the point estimates, suggesting that expectations are indeed driving the results, rather than an omitted variable.

Table 3: Low expectations and attachment, KMPS

	Gets bored if unemployed				Ok if unemployed			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low expectations (not in six months)	-0.268*	-0.312*			0.321*	0.283*		
	(0.135)	(0.140)			(0.125)	(0.126)		
Low expectations (not in a year)			-0.245	-0.283			0.486***	0.460**
			(0.153)	(0.157)			(0.139)	(0.141)
Controls		✓		✓		✓		✓
N	1,040	1,040	1,040	1,040	1,036	1,036	1,036	1,036

Ordered logit; robust standard errors in parentheses.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Unlike attitudes towards work, loss aversion is not explicitly measured in the KMPS. This is unsurprising: the survey was not designed to include psychology experiments. However, a variable that is correlated with loss aversion might be able to be used as an imperfect proxy. One possible proxy is participation in a burial society. Burial societies are informal group insurances schemes and are very common in South Africa.¹⁵ While a range of social and demographic factors are associated with burial society membership, they are a form of economic insurance, and electing to participate in a burial society may be correlated with being a more loss-averse person.

As an exploration of this possibility, we estimated

¹⁵ D. Schneider, *Burial Societies in South Africa: Prevalence and Importance* (Princeton University, 2008).

$$\begin{aligned} \text{accept}_{ij} = & \alpha_j + \beta_1 \text{lowexpectations}_i + \beta_2 \text{lowexpectations}_i \times \text{burial}_i + \beta_3 \text{burial}_i \\ & + \gamma_1 \text{lowexpectations}_i \times \text{age}_i + \gamma_2 \text{lowexpectations}_i \times \text{African}_i \\ & + \gamma_3 \text{lowexpectations}_i \times \text{age}_i \times \text{African}_i + \theta X_i + \varepsilon_{ij}, \end{aligned}$$

where *burial* is an indicator for a respondent's membership in a burial society, and X_i includes the same controls as before, including a quadratic function of age. If the effect of low expectations is larger for more loss-averse respondents, and if participation in a burial society is correlated with loss aversion, then the interactive coefficient on β_2 should be negative: for burial society members, low expectations should be even more strongly negatively associated with job acceptance. The three further interactions (with coefficients labeled γ) control for any other interactive association with burial society membership. Members of burial societies are more likely to be older and African; these controls ensure that β_2 is not simply reflecting a differential effect of low expectations on members of these groups.

Table 4: Loss aversion and accepting hypothetical jobs

	(1) One month	(2) Three months	(3) Six months	(4) One year
No job in:				
Low expectations	-0.0749 (0.0549)	0.0371 (0.0404)	0.0604 (0.0535)	-0.0390 (0.102)
Low expectations × burial society	-0.00709 (0.00753)	-0.0645*** (0.00919)	-0.0744*** (0.0153)	-0.0792* (0.0236)
Burial society	-0.00559 (0.0232)	0.0117 (0.0210)	0.00797 (0.0184)	0.00351 (0.0179)
Low expectations × age	0.000678 (0.00152)	0.000146 (0.000924)	-0.000153 (0.00119)	0.00207 (0.00174)
Low expectations × African	0.0969 (0.0560)	-0.0448 (0.0326)	-0.135* (0.0463)	-0.0541 (0.0991)
Low expectations × African × age	-0.00154 (0.00161)	0.000435 (0.000908)	0.00183 (0.00156)	0.000354 (0.00203)
Controls	✓	✓	✓	✓
Job fixed effects	✓	✓	✓	✓
<i>c</i>	0.853*** (0.0538)	0.842*** (0.0660)	0.848*** (0.0688)	0.852*** (0.0640)
<i>n</i>	5,250	5,250	5,250	5,250

Linear probability of accepting; robust standard errors in parentheses.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4 presents the results: β_2 is indeed negative, as hypothesized. The association between low expectations and job acceptance is even more negative for burial society members, and this interaction, in turn, is even greater in magnitude for deeper levels of pessimism, moving from column (1) to column (4). This is consistent with the theory, and an alternative explanation for this interaction is not obviously forthcoming to us. However, burial society membership is at best partially correlated with loss aversion, and is almost certainly correlated with other factors, as well. Therefore, it is important not to overstate this result, which should be taken as neither definitive nor crucial to the analysis of the paper, but rather as a check that is consistent with the theorized mechanism.

In short, among unemployed KMPS respondents who want jobs, across a range of hypothetical job offers, more pessimistic expectations are associated with less willingness to accept the offers. Moreover, this relationship is stronger, in general, for even lower expectations, and is despite a range of control variables. Additional checks are consistent with the mechanism theorized to link expectations to outcomes: respondents who expect to be unemployed report more attachment to an unemployed life, and the association is strongest among burial society participants, who may be more motivated by loss aversion.

Longitudinal Analysis: The Cape Area Panel Study

Empirical strategy and variables

When people's reference points and expectations change, does their behavior change as well? The CAPS asked survey questions that we will use to answer this question. The third and fourth panel waves of CAPS asked, like KMPS, comparable questions about accepting hypothetical jobs and expectations about finding work. In particular, because CAPS used the same job offers in both waves, with wages adjusted for inflation, we can study how respondents' attitudes and reported behavior changed over time.

Unlike KMPS, CAPS focused on young adults; when the first wave was collected in 2002, care was taken to ensure a sample representative of adolescents in the Cape Town area between the ages of 14 and 22. By wave 3 in 2005 and wave 4 in 2006 these respondents had grown older. We restrict our sample to 888 "African" or "colored" youth who were at least 18 years old at the time of wave 3 who report looking for a job in both waves. Table 5 summarizes the sample, which is recent than the KMPS sample and now includes respondents who may have had a job in one period or the other.

Table 5: Cape Area Panel Study summary statistics

	Mean	Standard deviation
<i>Chances of you working next March?</i>		
Low or very low	0.17	
Very low	0.05	
<i>Hypothetical job acceptance</i>		
Domestic worker with a monthly wage of R864	0.36	
Security guard with a monthly wage of R1300	0.45	
General worker with a monthly wage of R1438	0.66	
Machine operator with a monthly wage of R1619	0.71	
Cashier at a retail store/supermarket with a monthly wage of R2000	0.84	
Bookkeeper, with a monthly wage of R3000	0.89	
Male	0.39	
African	0.57	
Reservation wage (R/month; median: 1,500)	1,850	1,232
Wave 3 age (min: 18; max 26)	21.1	2.17
Wave 4 age (min: 19; max 27)	22.0	2.12
Currently has a job (wave 3)	0.21	
Mother alive (wave 3)	0.88	
In school (wave 3)	0.15	
Ever [been or made] pregnant (wave 3)	0.35	
<i>n</i>	888	

The dependent variables are similar to those in KMPS: reported willingness to accept a range of six hypothetical job offers. As Table 5 shows, respondents were unsurprisingly more likely to accept higher paying jobs. The independent variables still capture low expectations, but in a different way. Instead of asking different questions about the length of time a respondent expects to stay unemployed, CAPS asked participants about the probability that they would be working “next March”—and let answers range from “very high” through “high” and “about 50/50” to “low” and “very low.” We will interpret “low” and “very low” as indicators of expecting to be unemployed, and therefore maintaining unemployment as a reference point.

The cross-sectional KMPS results found that participants with lower expectations were, on average, less likely to accept hypothetical jobs. While these

models included many control variables intended to capture unobserved differences in intensity of desire for a job, the causal connection between expectations and behavior could not be assured. To strengthen the evidence of a causal connection, this section uses panel data from CAPS. Because each respondent was interviewed more than once, regression with respondent fixed effects can control for any individual-specific heterogeneity that might have confounded the KMPS results.

In particular, with CAPS data we will estimate

$$\Delta \text{accept}_{ijt} = \alpha_j + \beta \Delta \text{low expectations}_{it} + \theta \Delta X_{it} + \Delta \varepsilon_{ijt},$$

where t indexes survey waves and Δ indicates the change in a variable from wave 3 to wave 4 of CAPS (here, first differencing is equivalent to fixed effects). In addition to permitting clearer causal analysis using the panel structure, the CAPS data allow for a much wider range of control variables. The vector X_{it} now includes, for both survey waves, indicators for a somebody in a respondent's household recently having lost a job; for whether the respondent currently has a job, currently is looking for a job (including if she has one; often work is temporary), and currently is in school; whether the respondent's household has recently sometimes not had enough to eat; whether the respondent has a health problem, and a one to five subjective health assessment; the respondent's subjective assessment of his HIV risk; whether the respondent's mother and father are alive; whether the respondent's household includes a recipient of the State Old Age pension; whether the respondent is married; whether the respondent has ever been pregnant or has made somebody pregnant; whether the respondent has a driver's license; the respondent's alcohol consumption; and a variable we constructed from the adult surveys approximating the respondent's local unemployment rate with the mean adult unemployment rate in his survey cluster. As in the KMPS analysis, the intent is not to estimate the causal effect of each of these variables, or even to claim that there is one, but rather to include enough to satisfy the conditional independence assumption that, conditional on these variables, changes in expectations are not correlated with changes in the error term. Standard errors are clustered according to 233 geographic sampling units.

One further control of particular importance is a respondent's reservation wage—the minimum pay for which she would be willing to work. CAPS asked “What is the absolute lowest take-home wage that you would accept for any permanent, fulltime work?” This variable, while certainly measured with error, is important to the interpretation of β as a causal effect because it will control for eagerness for a job that might be inadvertently but endogenously influencing respondents' expectations of finding a job.

Longitudinal results

Table 6: Low expectations and accepting two hypothetical jobs in CAPS

	(1)	(2)	(3)	(4)
	Accept guard with monthly wage of R1300			
Very low probability	−0.169** (0.0634)	−0.162* (0.0692)		
Low probability			−0.0876* (0.0379)	−0.0873* (0.0395)
Extended controls		✓		✓
Respondent fixed effects	✓	✓	✓	✓
<i>c</i>	0.455*** (0.00325)	0.643*** (0.176)	0.461*** (0.00642)	0.663*** (0.174)
<i>n</i>	1,776	1,728	1,776	1,728
	(5)	(6)	(7)	(8)
	Accept machine operator with wage of R1700			
Very low probability	−0.225*** (0.0541)	−0.228*** (0.0547)		
Low probability			−0.120*** (0.0349)	−0.106** (0.0354)
Extended controls		✓		✓
Respondent fixed effects	✓	✓	✓	✓
<i>c</i>	0.725*** (0.00277)	0.985*** (0.142)	0.734*** (0.00591)	1.012*** (0.142)
<i>n</i>	1,776	1,728	1,776	1,728

Linear probability of accepting; standard errors clustered by sampling unit in parentheses.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

This analysis has two cross-cutting levels of fixed effects: each respondent was asked in two survey waves about six different jobs. To clarify the results, Table 6 first presents regression results focusing only on two of the hypothetical jobs: working as a guard and as a machine operator. The hypothesis that $\beta < 0$ is confirmed. Believing there is a low probability of working next March is associated with being 11 percentage points less likely to accept the machine operator job, and nine percentage points less likely to accept the guard job. As in the KMPS data, having even lower expectations is even more depressive of take-

up, by 23 and 16 percentage points, respectively. Even this large set of control variables changes the estimates only slightly, again suggesting that expectations do not primarily reflect omitted variables.

Table 7: Low expectations and accepting six hypothetical jobs in CAPS

	Low probability		Very low probability	
	(1)	(2)	(3)	(4)
Low expectations	−0.0642** (0.0205)	−0.0600** (0.0205)	−0.137*** (0.0330)	−0.136*** (0.0326)
Reservation wage		−0.00000733 (0.00000394)		−0.00000750 (0.00000396)
Extended controls		✓		✓
Job fixed effects	✓	✓	✓	✓
Respondent fixed effects	✓	✓	✓	✓
<i>c</i>	0.00862 (0.0129)	−0.000724 (0.0134)	0.00853 (0.0127)	−0.00131 (0.0132)
<i>n</i>	5,328	5,328	5,328	5,328

Linear probability of accepting; standard errors clustered by sampling unit in parentheses. Respondent fixed effects estimated by differencing. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 7 reports the full specification, with fixed effects for each of the six jobs. The average coefficient on low expectations among all six hypothetical jobs is similar to the estimate reported for the two jobs. Like in Table 6, reporting a “very low” rather than a “low” probability is associated with a difference in acceptance approximately twice as large. Therefore, using a different measure of depth of pessimism—probability rather than time—replicates the finding from the KMPS data of larger effects of lower expectations.

Unfortunately, this strategy cannot be used to replicate the tests of the mechanism available with the KMPS; CAPS did not ask about being bored, and loss aversion, as an individual difference, is absorbed in the respondent-specific fixed effects. The effects of low expectations found with the CAPS data are much larger than the effects found with the KMPS data. This could partially be a consequence of interviewing a younger population, or of potentially more accurately measuring expectations using probability. Importantly, the panel results estimate the effects of changes in expectations and reference points, which might be more salient than levels, and therefore more important for behavior.

Discussion

Theories of reference dependence suggest that expecting an outcome encourages people to become attached to it, and therefore be less ready to accept an unexpected better opportunity. This paper has documented that, among low-employment populations in the Cape Flats area of Cape Town, South Africa, pessimistic expectations are associated with less willingness to accept hypothetical job offers, and that this association appears to reflect the hypothesized mechanism.

This finding contributes to two broader literatures in economics. In behavioral economics, it offers further confirmation that expectations—rather than, for example, the status quo—are the source of reference points. In labor economics, it expands the growing list of documented cases of reference-dependent labor supply to include an example of poor people in a developing economy. Unlike earlier studies of reference-dependent labor supply in developed countries, this paper has used two data sets that measure reference points directly.

Where low expectations are promoted by existing disadvantage, this perverse effect of reference-dependence could deepen the disadvantage further still. To emphasize, this would not be because poorer people are more “behavioral” or “psychological” than “rational” richer people, but because low expectations were input into the same reference-dependent thinking that many people share. Theories of poverty based on the economic concept of diminishing marginal utility suggest that the poorest should have the greatest motivation to improve their standard of living.¹⁶ However, where reference-dependence has this unfortunate effect, expecting a bleak future could encourage it.

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¹⁶ C. Karelis, *The Persistence of Poverty* (New Haven: Yale, 2007).

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