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Abstract

The present study explores the question of whether there is an advantage to interviewing at a certain time of day, or in a certain position relative to others. Field data was cross-examined with survey data from 409 Penn students, which indicated if the individual had received a second round, and thus had been successful, after their first round interview. We found that individuals who interviewed (1) with an interviewer who had conducted fewer interviews prior to the given interview and (2) at an earlier time during the day had higher success rates. Rates of success declined as prior interviews increased and as the time of the interview became later. Prior research suggests that ego depletion, discrimination, and/or endogeneity may be at play in affecting these results. The results of this study indicate an answer to our research question, as well as the mechanisms affecting interview success as related to time of day, may benefit from further experimental research.

Keywords

interview, timing, time of day, OCR, on campus recruiting, decision fatigue, ego depletion

Subject Categories

Psychology

INEQUITY IN THE OCR INTERVIEW PROCESS

An Honors Thesis in Philosophy, Politics and Economics on the Relationship Between Time and OCR Interview Success Rates

By Jillian Wang, Advisor Jason Dana

ABSTRACT

The present study explores the question of whether there is an advantage to interviewing at a certain time of day, or in a certain position relative to others. Field data was cross-examined with survey data from 409 Penn students, which indicated if the individual had received a second round, and thus had been successful, after their first round interview. We found that individuals who interviewed (1) with an interviewer who had conducted fewer interviews prior to the given interview and (2) at an earlier time during the day had higher success rates. Rates of success declined as prior interviews increased and as the time of the interview became later. Prior research suggests that ego depletion, discrimination, and/or endogeneity may be at play in affecting these results. The results of this study indicate an answer to our research question, as well as the mechanisms affecting interview success as related to time of day, may benefit from further experimental research.

I. LITERATURE REVIEW

Introduction

Approximately 50% of University of Pennsylvania students receive their first job post-graduation through On-Campus Recruiting (OCR) (“Career Plans Survey Reports”). Hundreds of different employers conduct thousands of interviews throughout the year for positions in financial services, consulting, engineering, and other corporate business or technology related positions. The interviews conducted through OCR are typically “screening,” or first round, interviews. Employers will typically invite the strongest candidates for a final second round interview.

Students often speculate when the “best” time to interview is. Namely, is there an advantage to interviewing at a specific time of day, or in a specific time slot relative to others? Given that OCR is a critical source of jobs for graduating seniors, fairness in the process is highly valued by all parties: seniors desire an equal opportunity at the jobs they interview for, Career Services work for seniors to receive a high rate of quality job placement, and firms want the best candidates for the jobs they offer. If an extraneous factor—something as seemingly minor as the time of day when a student interviews—were to affect the fairness of the interview process, students, Career Services, and employers all have reason to be alarmed. In an ideal world, the only basis for a second round offer after an interview should be the performance of the interviewee. When there is enough variation across different interview times during the day and between individual interviewers, it would ultimately be unfair if there exists a patterned disadvantage for those interviewing later in the day. The present study observes such an

irregularity in the success rates of interviews conducted at different times of the day, and explores the implications of a disadvantage in interviewing later in the day.

Various experiments have already been conducted on topics related to perception, decision processes, and ego depletion, all of which are areas that are related to judgments in interviews. Some studies on the effectiveness of interviews question their ability to predict successfulness in a job at all. In the current research, we examine the differences in interview success rates, measured by a second round interview offer, across different measures of ordinal position and time of day.

Prior Research on Decision Fatigue and Ego Depletion

In decision-making and psychology, decision fatigue explains the deteriorating quality of decisions made by an individual, after a long session of decision-making. Another related phenomenon is ego depletion, which Baumeister et al. described as the idea that self-control or will power is exhaustible, meaning it can be used up over time (1998). Baumeister et al. found that individuals who forced themselves to eat radishes instead of tempting chocolates subsequently quit faster on unsolvable puzzles than people who had not had to exert self-control over eating. Relatedly, an initial task requiring high self-regulation made people more passive in the long run (Baumeister et al., 1998). Schmeichel, Vohs, and Baumeister (2003) found in their studies that ego depletion did not impede performance on tasks that involved memorizing and subsequently recalling nonsense syllables or familiar information; however, it did impair performance when an activity that involved logical reasoning followed use of self-control. These findings suggest that when an individual's energy levels are low, mental activity

that requires self-control is impaired. In essence, applying one's self-control impairs an individual's ability to regulate oneself later.

This phenomenon was also observed when it was connected to individual's ability to make judgments. Pocheptsova et al. found that resource depletion (created by self-regulation earlier tasks) decreased one's ability to engage in effortful and deliberative processing, leaving the decision maker with only simpler decision strategies on which to rely (2009). This suggests that in interviews, perhaps afternoon participants are judged on more external factors like appearance and behaviors rather than on content.

In a sense, interviewers are like judges, in so far as the decisions they make have impacts on individuals other than themselves. Danziger et al. questioned whether judges experienced decision fatigue. Legal formalism states that judges apply legal reasons to a case in a rational, and calculated manner. On the other hand, legal realists argue that the rational application of legal reasons does not sufficiently explain the decisions of judges make. Danziger et al. found that the latter was true. By recording judges' rulings into three segments—before their first break, between the first and second break, and after the second break—it was found that the percentage of favorable rulings drops from approximately 65% to nearly zero within each session and returns back to 65% after a break (2011). This implies that decision fatigue effects our perceptions of others. This led us to question if decision fatigue plays a role in interviews—interviews like court cases require judgment of an individual—so perhaps, individuals who are interviewed why the interviewer is tired might be at a disadvantage.

While several studies discuss and provide preliminary support for ego depletion, there

currently exists no unanimous definition of the phenomenon. Furthermore, the theory of ego depletion relies on an internal process that can only be indirectly tested and not experimentally or causally confirmed. One study by Converse and DeShon (2009) actually demonstrated that when subjects completed two activities that required self-control, their capacity to devote effort to a task actually improved. They attributed this to the expectation individuals develop that such an activity will require effort, and named it “learned industriousness.” This study casts doubt on ego depletion, and suggests the phenomenon be attributed to observed behavior with care.

Decision fatigue might refer to any deterioration of decision-making, including ego depletion, tiredness, distraction, poor mood, etc. This also may include any form of an agency problem, in which the interests of the firm are not in line with the interviewers, i.e. they are not incentivized to make the best possible decision because they simply do not care as much as the firm might. They also might not feel like staying later in the day, or are in a rush to leave to go back home (which often, is a few hours’ trip). In the case of an agency problem, the interviewers have the cognitive capacity to make decisions but do not have the correct incentives to make a proper effort. For the purposes of this study, both a cognitive or psychological deterioration of decision-making and the agency problem will be compounded in reference to general decision fatigue.

Prior Research on Statistical Discrimination In Interviews

Discrimination “is the concept of perceiving, noting, or making a distinction or difference between things; a distinction (made with the mind, or in action)” (Oxford English

Dictionary). Discrimination can be broken into two key categories: Taste-based and statistical. Economists describe "taste-based" discrimination as a situation where employers do not give a minority a job because they simply don't like minorities (Hartford, 2007). This discrimination does not only need to be in an employer-employee relationship, but can also be carried over into any relationship where discrimination might occur.

More pertinent to the current research, statistical discrimination is the economic theory of inequality based on stereotypes. According to this theory, inequality exists between demographic groups even when economic agents (consumers, employers, etc.) are reasonable (meaning fair and sensible) and non-prejudiced (in taste-based they are overtly prejudice). This type of preferential treatment, for one group over another, is labeled "statistical" because stereotypes may be based on the discriminated group's average behavior (Arrow, 1973).

Past studies have found both various sources of, and outcomes because of statistical discrimination. In circumstances where men and women perform similar job roles, the jobs are often assigned distinct organizational locations. More specifically, employers assign men and women different job titles—men get better titles than women, implying a statistical discrimination (Biebly, 1986). In fact in 2010, women earned 77% of what men earned for comparable jobs because of statistical discrimination (Coy, 2010). Similarly, African Americans are found to make less than their white counterparts, when individual and job characteristics are controlled for (Oettinger, 1996). Additionally, it was found that young men are asked to pay more on their insurance premiums because of statistical discrimination based on historical rates of collisions (Dahlby, 1983). While all of the aforementioned forms of discrimination are forms

of discrimination related to race and gender, it is possible to have statistical discrimination based on other types of stratifications.

Because of the evidence of the existence of statistical discrimination we aim to see if there is a similar discrimination in On Campus Interviews. Those who interview earlier in the day may be judged as being “early-risers” who are more motivated or who possess some inherently beneficial and attractive quality. If there is a difference between the success rates of those who interview based on when one interviews, perhaps interviewers use statistical discrimination to judge earlier candidates as being more qualified than those who interview later in the day. Ego depletion and decision fatigue might exacerbate such a bias against individuals who interview in the afternoon.

Prior Research on Interview Effectiveness

Admissions to schools and acceptance to jobs is based on a variety of variables, one of which is interviews. However, despite the weight that is put on interviews, their effectiveness has been called into question. A study regarding medical school acceptance and success claims that the admissions process criteria, which include GPA, GAMAST (Australian medical school entrance exam) and interviews explained roughly 20% of performance in medical school. Moreover, interviews were particularly un-predictive of success in medical school and added “nothing” (Wilkinson, 2008). A similar study found that the mean sample-size-effect size for the predictive power of interviews on academic success in medical school was 0.06 (95% confidence intervals 0.03–0.08), meaning the interviews had a very small effect on predicted success (Goho, 2006).

Additionally, this phenomenon is not only true for academic success in graduate school. Interviews prove to be relatively ineffective at providing insight as to an individual's ability to succeed on job. Researchers have used correlation tests to see the extent to which a score on an assessment predicts job performance. Measured on a scale of 0 to 1, a correlation of 0.3 or higher implies that the relation is robust enough to be trusted. The correlation of a typical interview to success on a job is less than 0.2, meaning a simple interview is ineffective at predicting success on a job. However, if the selection process "combines several elements including a personality questionnaire, a general reasoning test, a structured interview and job simulation exercises" you can increase the correlation to above 0.7 (Arthur, 2011).

Perhaps one of the reasons that interviews are not particularly effective is because interviewers are experiencing decision fatigue and/or are statistically discriminating based on the time of day of an interview. Whether or not interviews are fully valid predictors of job success, they are an integral part of the hiring process and will remain so. This suggests that care should still be taken in ensuring fair procedures in the interview process.

Research Overview

To date, there has not been research conducted that links decision fatigue or statistical discrimination to the context of on-campus interviews for college students. As such, we aim to examine if students who interview in the morning are given an advantage and to explore some of the possible mechanisms at work behind such a phenomenon.

II. METHODS

Participants

Participants were recruited from January 2012-March 2013 via a survey link sent to University of Pennsylvania students through various channels: club listservs, Facebook, personal emails, and class presentations. 70 participants completed the survey, yielding 409 individual interviews useable as observations. The survey was sent in waves throughout the school year; to incentivize participation, we raffled one \$50 gift card.

Procedure

Participants completed an online survey through Qualtrics after each OCR cycle of the Spring 2012, Fall 2012, and Spring 2013 University semesters. The only pre-requisite for completing the survey was if the individual had participated in OCR in the Career Services OCR suite in the McNeil building at the University of Pennsylvania. Participants were asked the firm they interviewed with, the position they were interviewing for, the date and the time of the interview, and if they received a second round or not. They were also asked to indicate their gender. No personally identifying information was collected and individuals were randomly assigned an ID number.

The information collected from these participants was cross-examined with public University of Pennsylvania records of OCR interview schedules. These records are available in the Career Services library and catalog the dates, times, and the interviewer and interviewees of each firm that recruits in the Career Services OCR suite. The researchers were careful to protect the anonymity of participants when coding each interview for different measures of

time of day, ordinal position of interview, and gender matches of interviewers and interviewees.

III. RESULTS

Participants (N=409) were made up of 181 (44.2%) male and 228 (55.7%) female students at the University of Pennsylvania who had participated in OCR at some point during the Spring 2012, Fall 2012, or Spring 2013 semesters. For the purposes of maintaining privacy, we did not collect any further demographic information.

The following measures of time and interview position were coded: absolute time of day (e.g. what time of day the interview began), serial time of day (separated into 5 categories and measured by 2 hour time intervals e.g. 1=8:00-10:00AM...5=4:00-6:00PM), position after break (i.e. how many interviews preceded the given interview after a break), minutes since break, and prior interviews (how many total interviews preceded the given interview).

These measures of time were each correlated with second round interview success (Figure 1). There was no significant correlation between interview success and time after break

or relative position after break. However, all of the observed correlations between measures of time and interview success were negative, suggesting that the later in the day one interview, the smaller the correlation with interview success.

Figure 1. Correlations with second round interview success (0=no interview offer, 1=second round interview offer)

Variable	<i>r</i> (with second round offer)	<i>p</i>
Absolute time of day*	-0.087	0.040
Serial time of day	-0.079	0.056
Serial position after break	-0.019	0.348
Minutes since break	-0.014	0.385
Prior interviews*	-0.146	0.001

*denotes statistical significance

Absolute time of day ($r=-0.087, p=0.04$) and prior interviews ($r=-0.146, p=0.001$) had statistically significant correlations. Interestingly, the correlation between gender match (i.e. having the same gender interviewer and interviewee) and interview success was negative ($r=-0.087, p=0.116$), suggesting that a gender match between interviewers and interviewees may be related to lesser interview success; however, this correlation was ultimately not statistically significant.

Serial time of day yielded a negative correlation ($r=0.079, p=0.056$), yet did not meet statistical significance. When serial time of day was broken into discrete categories and correlated with interview success, the

trend in correlations suggests that the earlier the interview, the more positive the correlation with interview success (Figure 2). However, the only measure yielding a statistically significant

Figure 2. Correlations with time of day of start of interview

Variable	r (with second round offer)	p
8:00-10:00 AM	0.039	0.218
10:00-12:00 PM	0.044	0.186
12:00-2:00 PM	-0.012	0.405
2:00-4:00 PM	0.000	0.496
4:00-6:00 PM*	-0.085	0.043

*denotes statistical significance-0.00.043).

correlation was between the latest time of day to interview, 4:00-6:00PM, and interview success ($r=-0.085, p=0.043$).

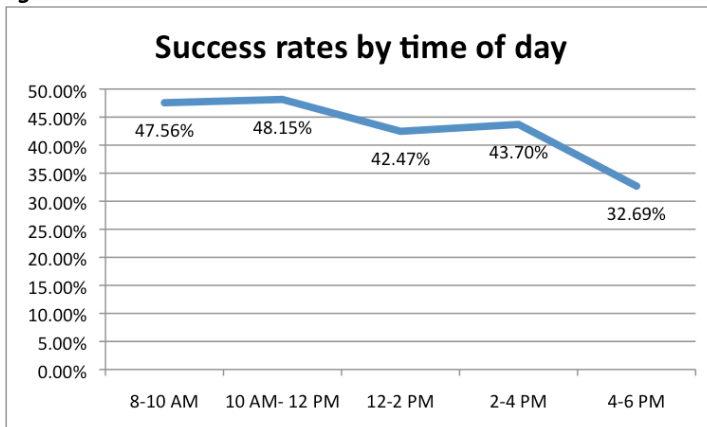
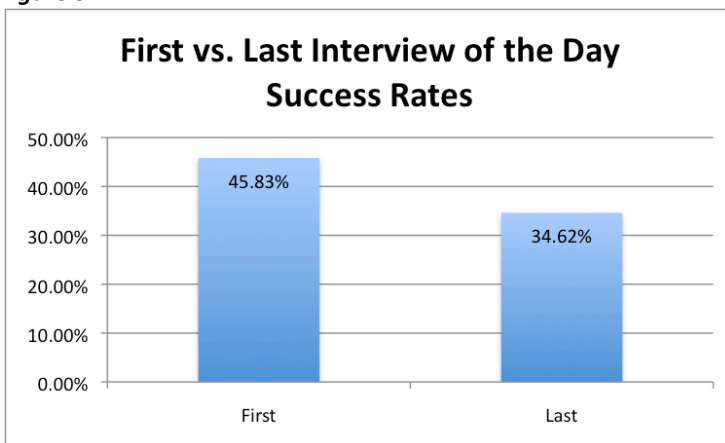
Our primary analysis suggested that prior interviews and absolute day might have the strongest connection to interview success. To further examine this interaction, success rates were calculated for each number of prior interviews (i.e. 0 [first] to 14 [the maximum number of prior interviews, or interviewing 15th]). The results are described in Figure 3. Averaging the difference between each additional prior interview yields a 1.29% decrease in the success rate. This decrease represents an overall 2% improvement in interview success for each interview

Figure 3.

# Prior Interviews	n	Second Rounds	Success Rate	Difference from +1
0	35	18	51.43%	5.71%
1	42	24	57.14%	-10.33%
2	47	22	46.81%	3.19%
3	44	22	50.00%	-7.14%
4	42	18	42.86%	6.16%
5	51	25	49.02%	-15.69%
6	42	14	33.33%	25.00%
7	12	7	58.33%	-41.67%
8	18	3	16.67%	14.58%
9	16	5	31.25%	13.19%
10	18	8	44.44%	-44.44%
11	10	0	0.00%	50.00%
12	10	5	50.00%	-20.00%
13	10	3	30.00%	3.33%
14	3	1	33.33%	18.01% (difference from prior interviews=0)

slot one moves earlier in the day. The rate of interview success when interviewing first is 51.43%; while when interviewing fifteenth it is only 33.33%; this is an 18.1% difference between interviewing first and interviewing fifteenth.

We then calculated the differences in interview success at different times of the day: morning (8AM-12PM), early afternoon (12-4PM), and late afternoon (4-6PM). Morning interviewers had a 47.85% success rate, early afternoon interviewers had a 43.23% success rate, and late afternoon interviewers had a 32.69% success rate. While the drop in success rate from morning to early afternoon interviews was -4.62%, this represents a 9.7% decrease in success rate. The drop in success rate from early to late afternoon is -10.54%, or a 24.3% decrease in success rate. This represents an overall drop of 15.16%, or -31.68% percent change from morning to late afternoon interviews (Figure 4).

Figure 4.**Figure 5.**

Comparing the first interview success rates with last interview success rates, we observe an -11.22% change in interview success from the first (45.83%) to the last (34.62%) interview¹. This represents a 24.5% improvement in interview success when interviewing first versus last (Figure 5).

In order to model the effect of the relationship between position of interview (prior interviews) and interview success (1=second round invite,

0=no invite), we ran a probit regression. We clustered errors to indicate that each subject had multiple interviews (which had been treated as independent observations) and that the observations may be correlated within subject, but are independent between subjects. The regression coefficient was $\beta = -0.054$ ($p = 0.002$), indicating that an increase in the predictor (number of prior interviews) leads to a decrease in the predicted probability (Figure 6). When we regressed second round interview success on both prior interviews and absolute time, the

¹n=214. Only prior interview information is available from Spring 2012; the relative position of an interview during the day (i.e. 5th out of 14 interviews) is only available for Fall 2012 and Spring 2013 interviews.

coefficient remained negative ($\beta=-0.048$), as well as statistically significant ($p=0.014$) (Figure 7). We also standardized each variable and regressed the standardized independent variables, which yielded a coefficient of $\beta=-0.166$ ($p=0.008$). This was the strongest observed coefficient of all of the probit regressions run on prior interviews and time of day (Figure 8).

One factor we wanted to take into account is that some interviewers had their first interview later in the day; for example, the first interview of the day might start at 12PM instead of in the early morning. To control for this, prior interviews and absolute time of day were standardized and added together to create an aggregated variable representing a truer account of time/position of interview. We also clustered errors in this regression. The coefficient remained negative for this probit regression: $\beta=-0.139$ ($p=0.002$) (Figure 9). The larger β suggests that there was noise in the previous data, which was controlled for through standardizing and adding the two variables. In general, our regressions suggest that as the

Figure 6. Probit regression of prior interview by success

	β	z	p
Prior interviews	-0.054	-3.15	0.002

Figure 7. Probit regression of prior interview and absolute time by success.

	β	z	p
Prior interviews	-0.047	-2.45	0.0014
Absolute time	-0.021	-0.98	0.327

Figure 8. Probit regression of z-scores of prior interview and absolute time by success.

	β	z	p
Prior interviews (standardized)	-0.166	-2.67	0.008
Absolute time (standardized)	-0.091	-01.39	0.166

Figure 9. Probit regression of aggregated standardized "time" variable by success.

	β	z	p
Time variable (standardized)	-0.139	-3.14	0.002

position and time of the interview starts later in the day, the chance of interview success decreases.

IV. DISCUSSION

The present research examined the relationship between when an interview is and the success of the interview. In general, we found that the most relevant variables related to interview success, in order of the strength of the relationship, were (1) the number of interviews that had been conducted prior to a given interview, and (2) the time of day the interview began. The more interviews that preceded a given observation, the lower the chance of success; this corresponded to an estimated 2% decrease in chance of success with each additional prior interview, and an observed 24.5% decrease in rate of interview success from interviewing first versus last. When comparing the morning versus the late afternoon, there was an observed percentage change of -15.16%, suggesting an overall 31.68% decrease in chance of interview success when interviewing in the late afternoon versus during the morning.

No significant changes or patterns in success rates were observed when factoring in interviewer breaks throughout the day. Though gender data was collected and there was a slight correlation between having a gender match (i.e. the same gender for interviewer and interviewee), and a decrease in interview success, the correlation did not reach significance. A larger data sample might help strengthen this relationship and could be worth further exploration.

It should be noted that this study was based primarily on field data. There is also no way of accounting for endogenous selection of interview times because we could not manipulate

the independent variables by asking individuals to sign up for time slots randomly; as such, does not indicate causation. Additional experimentation that manipulates time of day or position of interview and/or a larger sample of field data would be helpful in further establishing the effect of time of day on interview success. Another limitation of the current research is that industry or type of interview was not factored into interview success rates. For example, a consulting case interview might show a lesser effect of time on interview success, because such an interview might provide less opportunity than a purely behavioral interview for interviewer bias. Exploring the effect of time on success by industry might provide further insight into if case or objective test interviews help ameliorate bias, or if the effect of time of day persists regardless of type of interview or the interview industry.

However, based on the current sample, there exists a statistically significant correlation between time and success of interview. The current discussion delves into some potential reasons as to why this relationship exists, and problems such a correlation might pose. Actions to potentially ameliorate any problems the relationship between time of day and interview success may pose are then explored.

Potential Factors: What Causes the Time of Day/Interview-Success Interaction?

The literature review of the current study provides the experimenter's intuition on the variables that may affect interview success, namely, decision fatigue and statistical discrimination. While decision fatigue might be in play, the current research demonstrates no effect of inserting breaks throughout the day and a "refreshed" chance of interview success. This suggests that the two phenomena either are absolute, i.e. cognitive resources are depleted

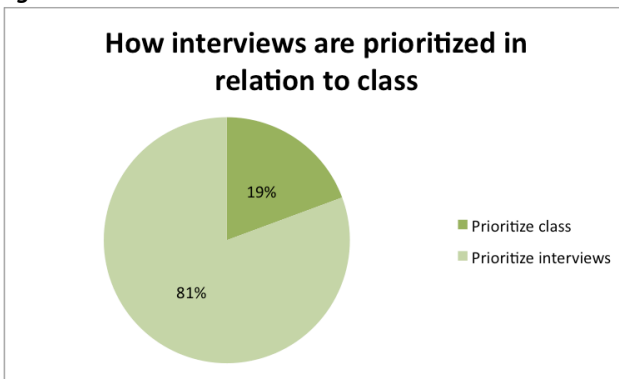
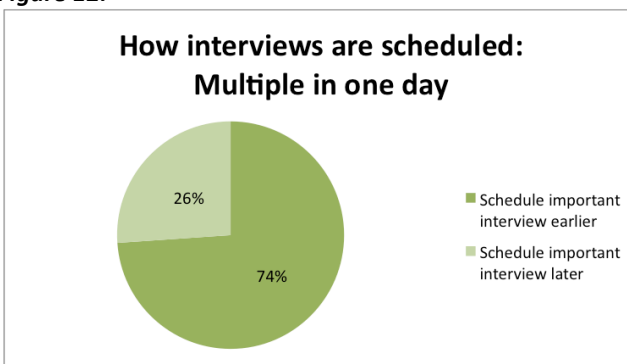
throughout the day and only refreshed by a several hour break or sleep, or they are not the driving effect on decreased interview success rates.

Statistical discrimination is another potential reason as to why there may be a relationship between time and interview success. Both within and across subjects, we still examined this correlation; therefore, there was enough variation within subject to suggest that even individuals did better when they interviewed earlier. This may be due to interviewer bias on an interviewee: perhaps the interviewer makes judgments that the earlier interviewees are more motivated, prioritize work first, or possess whatever attribute the interviewer believes makes a better candidate. This also may be due to interviewee bias: perhaps individuals believe they truly interview better in the morning and thus are more confident and successful earlier in the day. Or, they may have a second-order belief, or an expectation, that interviewers believe earlier interviewees perform better, which also could relate to higher success rates.

Figure 10. Survey on interview scheduling preferences.

How do you decide how to sign up for a first round OCR interview? Choose all that apply.

- I prefer to interview first thing in the morning.
 - I prefer to interview in the late morning.
 - I prefer to interview at any point in the morning.
 - I prefer to interview in the early afternoon.
 - I prefer to interview in the late afternoon.
 - I prefer to interview at any point in the afternoon.
 - I prioritize class and my other activities over interviews (e.g. I do not skip class for an interview, I schedule around it).
 - I prioritize interviews over class and other activities (e.g. I skip class for interviews).
 - If I have multiple interviews in a day, I prioritize the interview I care more about by scheduling it earlier in the day.
 - If I have multiple interviews in a day, I prioritize the interview I care more about by scheduling it later in the day.
 - I don't particularly have a preference and sign up for whichever time slot is left.
-

Figure 11.**Figure 12.****Figure 13. Survey on interview time preferences (n=48).**

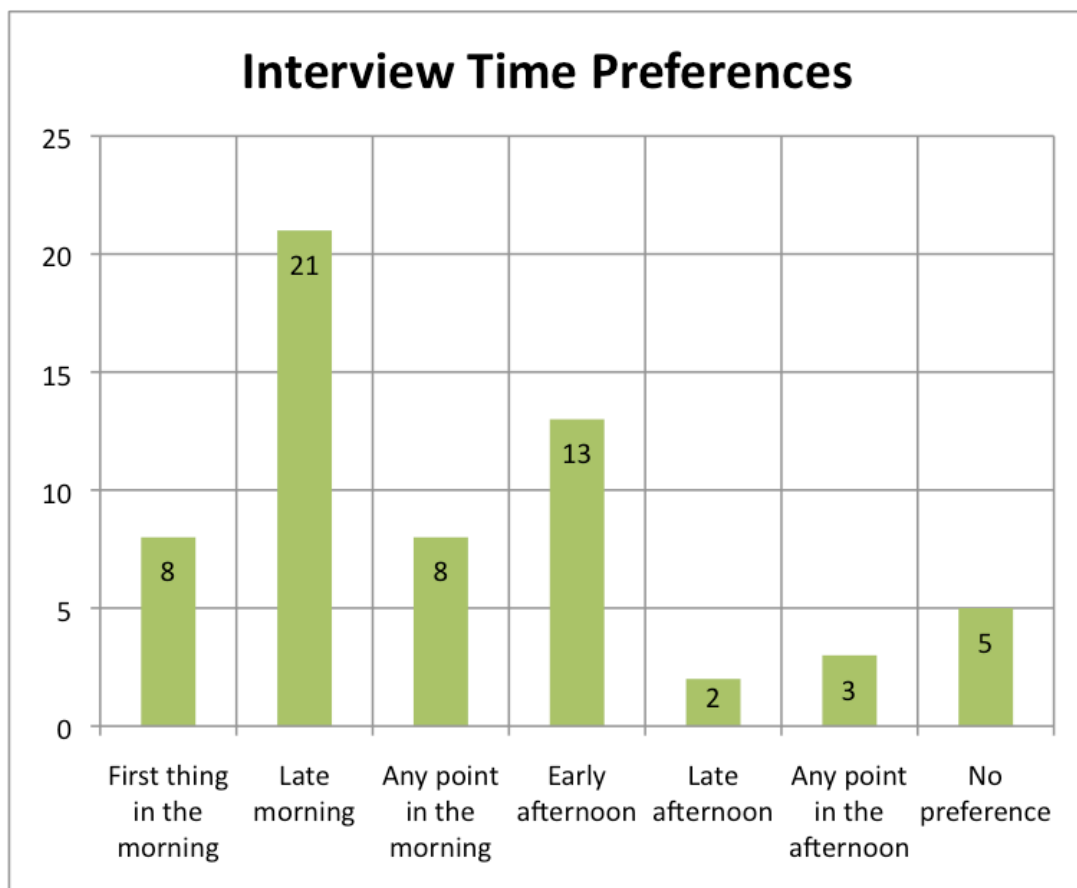
	<i>n</i>	<i>% of respondents answering "yes"</i>
First thing in the morning	8	13.33%
Late morning	21	35.00%
Any point in the morning	8	13.33%
Early afternoon	13	21.67%
Late afternoon	2	3.33%
Any point in the afternoon	3	5.00%
No preference	5	8.33%

To examine the motivations behind why people sign up for the interview slots they do—i.e. the morning versus the afternoon—we conducted a one-question survey (Figure 10). We found that in general, interviews were prioritized over class (79.4%) more often than class over interviews (20.6%) (Figure 11). This suggests that generally, students try to choose time slots that they believe might provide them the greatest chance of success. Furthermore, when individuals have multiple interviews in one day, they prioritize the one that is more important to them earlier (73.9%), rather than later (26.1%) (Figure 12). Anecdotally, some students might choose to prioritize their later interview because they “are not

morning people” or want to “warm up” with the lesser important interview. Interestingly, most individuals choose to interview in the late morning (35%) more than any other time during the day, including first thing in the morning (13.33%), or during the early afternoon (21.67%). Only

2 respondents (3.33%) indicated that they prefer to interview in the late afternoon, and 3 preferred an interview at any point in the afternoon (5%). It is important to note that this does not include those who prefer to interview in the early afternoon; many people have a distinct preference for the early afternoon versus other (later) time slots in the afternoon. Finally, only 5 individuals had no preference at all as to the time of their interview (8.33%) (Figure 13). Overall, the survey seems to indicate that students generally have a preference for earlier in the day than in the late afternoon; ideally, not many respondents prefer to interview at the end of the day.

Figure 14. Survey on interview time preferences (n=48).



Interview Effectiveness Concerns

Should we be concerned?

Some may argue that the idea that morning interviewees find success in second rounds more frequently is not necessarily a problem. In that case, statistical confounds would account for the observations in the present study: students who interview in the morning simply may be the objectively better candidates. If this is the case, there are no issues of fairness in the current framework used for the OCR interview process. The current system then is efficient in selecting the best possible candidates and no further changes to the system should be prescribed.

However, if this is not the case, there are several concerns that accompany a trend in the success rates of interviewees based on the time slot they choose. Given that there are a limited number of interview slots in the morning, and that generally there is less opportunity to interview during the morning than during the afternoon (in absolute terms, 4 hours of the morning from 8AM-12PM versus 6 hours of the afternoon from 12PM-6PM), demand exceeds supply of preferable interview spots. This means there may ultimately exist an inequitable economic distribution of time slots for OCR interviews.

The survey results of the present study (see “Potential Factors” above) suggest there may be an endogeneity problem: there does exist some sort of expectation that morning interviews are more desirable and thus may yield a higher chance of success, whether that is due to potential interview bias or generally better quality performance from interviewees earlier in the day. Given that many individual subjects had enough variation in time of interview throughout the day and that the relationship between time and interview success persisted

despite this, concerns about the fairness of the current interview framework are likely justified, and unfortunately—unlikely due to statistical error or chance.

Practical concerns: Reduction in predictive validity

If an individual is simply more likely to be offered a second round by virtue of the time they interview during the day, the interview cannot be assumed a fully objective test of ability. Such a bias reduces the predictive validity of an interview as correlated with future job performance. Some have argued that interviews in general are a poor predictor of interview success (Wilkinson, 2008; Goho 2006). With this added bias, interviews may be even more arbitrary than formerly thought. They also provide little to no value to the company if they do not predict job success. In fact, it is in a company's best interest to avoid morning interview bias if the interview does not predict job performance; other judgment criteria or changes to the current interview schedule might prove useful in assessing the value of a candidate.

Ethical concerns: Unfair value judgments (discrimination?)

One might argue that an interviewer may assume that those who interview in the morning are simply more responsible, motivated, or any slew of qualities associated with being an early-riser. This may not appear to be an impractical assumption, however, what about those who are interviewed later in the day? Are these individuals assumed to not be as responsible or as motivated as the early interviewers, just because they chose a later time slot? This is an unfair judgment because demand exceeds supply of morning interviews; some interviewees simply have prior commitments in the early morning that would eliminate the

possibility of an early interview. There is also fault in making a connection between interviewing early and having positive personality traits, especially if no correlation has been proven to exist in prior studies.

Can this problem be fixed?

Based on our research and anticipated findings, we propose five potential changes in the Penn OCR policies for the purpose of reducing morning interview biases. They are not mutually exclusive, nor do any of them (individually or together) assume to fix the problem of biases in interviewing. It should be noted that the following proposals aim to avoid the morning bias by either (1) creating more opportunities for early-morning interview time slots (proposals 1 and 4) or (2) reduce bias by changing the interviewing format or redistributing time slots (proposals 2, 3, and 5). It should be noted that proposals 1-4 induce constraints on the University that might create logistical problems and ultimately might decrease Penn's competitive advantages over other Universities' career services and OCR. Ultimately, the greatest chance to improve fairness in the OCR process will have to originate from the firms who recruit at Penn, and not the University itself.

Proposal 1. Change university policy to prioritize interviews over class

One barrier to early morning interviews—and sometimes interviewing scheduling in general—is class and prior university commitments. As Penn is already a very pre-professional university, the policy should be changed to prioritize interviews over class. Given individuals will have to prove their absence is due to an interview, this would allow students to choose the

optimal time slot based on when they believe they could best perform. If students feel they perform best early in the morning but have 9 AM class, they would be excused from class in order to attend their interview.

Limitations. Although this change would allow students to prioritize their impending future post-graduation over class commitments, which presumably could be made up for later, there are a few limitations to this proposal. Namely, students might be prone to abusing this system by intentionally scheduling their interviews during class time. However, quite frankly this practice already exists (figure 11), and this proposal would enact a system in which students would have to provide evidence of an interview to miss class. The policy would also send a signal to students that the University cares about their career growth. Additionally, it would help the University's reputation because more students, when interviewed at a more optimal time, might find more success in second round and full-time job offers.

Proposal 2. Longer breaks in between interviews

A possible mechanism behind this bias in morning interviews might be decision fatigue. If this were the case, adding in more frequent or longer breaks between interviews could be a way to help reduce or break up the continuous cognitive load which interviewers process during an interview day. We did not examine an effect of breaks on interview success in the current study, but perhaps the breaks were too short (15 minutes, on average), or too infrequent (approximately 3 per day) to affect success rates.

Limitations. One major problem with this proposal is that research on decision fatigue is minimally conclusive. Additionally, it has not been proven that ego depletion and cognitive load

throughout the day would be reduced with breaks. Finally, breaks for interviewers are already inserted into the interview day and did not show to have an effect on interview success in the present research. An interesting experiment might be to explore if altering interview day formats has an effect on decreasing morning interview bias.

Proposal 3. Less/shorter interview or change in interview format

There are studies suggesting there is little to no predictive validity in the interview process (Wilkinson, 2008; Goho 2006), yet at Penn it is one of the most important factors in hiring decisions for employers after resumes are screened. Perhaps reducing the length or weight of the interview in the overall selection process might be helpful in reducing the biases in face-to-face interviews. Conducting research to determine what criteria have the most predictive validity for job success, and weighting this the highest in selection for second rounds and job offers would be a more effective process than giving the interview a majority of the weight in decisions post-resume screening (which is the current practice). Currently, interviews at Penn range from 30 minutes to over an hour; standardizing the interview time across industries might force employers to resort to considering other criteria, such as the cover letter, GPA, resume, etc. in addition to the interview at that stage in the hiring process.

Additionally, some industries add a “test” like component to their interviews, which are presumed to add predictive validity to the success of a candidate on the job. One example is the case interview, which is used mainly in management consulting interviews. Adding this type of test-like component to all interviews, rather than conducting only traditional behavioral interviews, may help to reduce the subjective biases on early morning interviewees.

Limitations. The main limitations of this proposal stem from the employers—with so many candidates, the interview may be a fast and easy way for them to make a judgment of character based on interviewee presentation. Employers would not want to reveal this motivation, but may argue that they have the right to conduct interviews in whatever format and at whatever length they feel is appropriate.

Proposal 4. Redistribute time slots or change interviewer schedules

One way to fix the problem of morning interview biases is to require all students to interview at the same time during the day in order to level the playing field. Since this is obviously not feasible in practice due to several limitations, a more reasonable suggestion would be to front-load morning interview opportunities, and eliminate the afternoon timeslots so that interviewers never have to interview for too long (assuming that decision fatigue and ego depletion are at play). If enough representatives cannot be sent down for face-to-face interviews all at the same time, phone or video chat (e.g. Skype) interviews can be held instead. Another option is to bring in different interviewers at different times of the day, so that no one interviewer has to sit for an entire day and all interviewers can have a fresh look at the candidates.

Limitations. There are several obvious limitations to this proposal. For one, finance and consulting firms operate on quite different schedules than students and simply may not be physically able to send that many interviewers for one hundred percent—or even just morning front-loaded—interview schedules. It also may be costly to send multiple representatives for interviews throughout the day. If multiple representatives aren't sent, phone and video

interviews versus face-to-face interviews may bring up an array of other problems and biases, unrelated to any of the mechanisms discussed in this paper. For example, poor connection may be attributed to irresponsibility of the interviewee versus simple bad circumstance, creating more potential sources of interviewee bias. Finally, this solution only helps the issues of ego depletion and decision fatigue, and only reduces judgment calls made on interviewees based on the time they choose in the case of standardized interview times.

Proposal 5. Randomize first/second interviews in first round (split up first round)

Many interviews require an individual to be seen by two interviewers during their first round. One proposal to help decrease bias is to require interviewees to interview both in the morning and during the afternoon at some point. Requiring half of the interview to take place at a “beneficial” time and the other half at a “less beneficial” time might help to even second round or job offer standards across candidates.

Limitations. This may not be the most convenient solution for students, since they may have only one time available to interview according to their busy schedules. In conjunction with the first proposal of prioritizing interviews over all else might help to reduce this inconvenience. However, there may be psychological issues that come into play when separating interviews; for example, interviewees now have free time to ruminate over their performance and may become overly nervous and worried about their first interview to the point that their second interview of the day suffers. This also may be a confusing option for employers if they do not have an objective scoring system in place to match up between interviews. After seeing so many different candidates, it may be hard for each individual to be memorable; it may be

argued that this is a benefit, though, because then the most memorable candidates will have to be more impressive to stand out. Again, this is still an issue if there is little predictive validity to the interview in the first place. All in all, even though this proposal has issues it may be a step in the right direction of reducing the bias associated with earlier interviewed candidates.

Ultimately, this proposal might help with interviewer bias, but does not ameliorate the problem of potential decision fatigue. If such fatigue is at play, other proposals will have to be considered and enacted in conjunction with this one in order to ameliorate those cognitive issues.

IV. CONCLUSION

The present research presents an interesting relationship: the later the time of an OCR interview, the lesser the chance of interview success. Should there exist a relationship, this poses a fairness issue for students whose careers are on the line. If time of day matters in interview success, and this relationship is not spurious or due to endogeneity, there currently exists an inequitable economic distribution of interview slots. Can students be fairly excluded from morning interviews—prime interview times—if University policy does not allow students to skip class? Should the current interview schedule framework be amended? On the other hand, is the relationship a result of an endogeneity problem, meaning a morning interview be a good signal of early rising and motivation? Or, is this an incorrect bias that disadvantages later interviewees? Additionally, interviewers may also be affected by longer interview days due to decision fatigue.

Though the exact causes of the observed relationship are unknown, it is clear that there is a significant chance of increasing one's chance of interview success—by over 31%—if an individual chooses a morning versus an afternoon interview slot. Ultimately, care should be taken in timing so as to allow equal opportunity for interviewees, especially at a University such as the University of Pennsylvania, where career placement via OCR is critical for over half of seniors. Further research (namely, a larger data set of observations) exploring the interaction between interview time and success will hopefully uncover results that help point University policymakers and interviewers in the right direction.

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