Should You Hire BlazinWeedClown@Mail.Com?

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When a person applies for a job online, one of the first things a recruiter learns about the applicant is the applicant's e-mail address. So what might a recruiter think about an applicant who refers to himself as DemonSeed420@ mail.com or FluffyBunny@mail.com? That is, would job applicants with unprofessional e-mail addresses behave less professionally than applicants with more appropriate addresses? Will CrzyBioch@mail.com be as unstable as she claims to be? Should an employer take a chance on LittleBabyLazy@mail.com?

Managers often make snap judgments about job candidates (Howard & Ferris, 1996) and do so using whatever information is available to them including the candidate's smile, clothing, handshake, small talk (Barrick, Swider & Stewart, 2010), or name. For instance, Bertrand and Mullainathan (2004) mailed resumés in response to help wanted advertisements in Boston and Chicago. The researchers mailed identical resumés, manipulating only the first name of the applicants to be either a stereotypically "White" name or a stereotypically "African-American" name. Across all industries, occupations, and employer sizes, resumés with "White" names (e.g., Greg, Brad, Kristen, and Allison) received 50% more callbacks than did resumes with "African-American" names (e.g., Darnell, Jermaine, Latoya, and Tanisha).

E-mail addresses function like names but e-mail addresses may have a greater potential to shape impressions than a given and/or family name because they can reflect more than gender and ethnicity. For example, e-mail addresses can imply skills (IronWelder@mail.com), political affiliation (BlueDem@ mail.com), interests (CarGal@mail.com), and values (ProLife56@mail.com). In a study about the relationship between e-mail addresses and personality traits, Back, Schmukle, and Egloff (2008) asked 600 university students to complete the Big Five Inventory. The researchers then gave the students' e-mail addresses to a group of judges and asked the judges to guess how each student would score on the Big Five. The authors found that the judges were able to guess how the students scored on Openness and Conscientiousness. For example, judges guessed that students with addresses like Cares4Little@mail.com and Sloppy-Moe@mail.com would score low on Conscientiousness, and they were right.

Like Back and her colleagues, we tested the relationship between e-mail address and personality, but we also wanted to know if an address could tell us something about an applicant's job qualifications. More specifically, we asked if candidates with addresses that contained references to sex, antisocial behavior, and deviant interests were less intelligent, conscientious, professional, and experienced than applicants without these types of references. We also asked if candidates with nondeviant but otherwise nonprofessional addresses including cutesy, geeky, and immature addresses were less qualified than candidates with more professional addresses.

Cognitive Ability

Cognitive ability is one of the best predictors of job performance (Hunter & Hunter, 1984; Murphy, 1989; Ree & Earles, 1992; Schmidt & Hunter, 1981). Research on the relationship between cognitive ability (i.e. GMA, *g*) and impression management suggests that individuals who use less desirable e-mail addresses may be less intelligent. Researchers have shown that cognitive ability is related to the ability to "fake good" on personality measures (Pauls & Crost, 2005). In other words, when asked to make a good impression, individuals high in cognitive ability are able to inflate their test scores on favorable traits to a greater extent than are people lower in cognitive ability. Because of the link between cognitive ability and faking, we expected that people who do not "fake good" by applying for a job with an acceptable e-mail address would score lower on tests of cognitive ability than individuals who apply using appropriate e-mail addresses.

Conscientiousness

Not only might an unprofessional e-mail address signal that an applicant is less intelligent, but it might also mean that he or she is less conscientious. Conscientiousness is a personality trait that represents the degree to which an individual is responsible, dependable, organized, and persistent (Barrick, Mount, & Strauss, 1993). Barrick and Mount (1991) found that Conscientiousness was a valid predictor of performance for a wide range of job types. Individuals high in Conscientiousness also tend to be concerned with impression management (Barrick & Mount, 1996). Impression management is most important in high stakes situations (Ganster, Hennessey, & Luthans, 1983) like job applications. Consequently, we expected that people who score high on measures of Conscientiousness would be concerned about making a positive impression and would be more likely to use a socially appropriate e-mail than would someone lower in Conscientiousness.

Professionalism

Herbert M. Swick (2000) put it aptly when he wrote, "professionalism is like pornography: easy to recognize but difficult to define" (p. 612). Though the definition of professionalism varies from industry to industry, hiring managers usually prefer professional applicants to the alternative. For example,

researchers studying e-professionalism in the medical field examined how employees use technology outside of work. These researchers find unprofessional employees are more likely to use personal cell phones to make work-related calls than their more professional counterparts. Unprofessional employees are also more likely to post inappropriate status updates on social networking Web sites (Spector, et al., 2010). With the research on e-professionalism in mind, we expected that applicants who applied for jobs using inappropriate e-mail addresses would score lower on a measure of professionalism than applicants using acceptable addresses.

Work-Related Experience

Applicants with job experience have had the opportunity to observe what is and is not acceptable in the workplace. Socialization researchers (Chao et al. 1994; Beyer & Hannah, 2002; Kristof-Brown, Zimmerman, & Johnson, 2005) suggests that the greater the experience, the greater the chance that an employee will have learned to pay attention to, and comply with, workplace norms. Consequently, we suspected that applicants with greater amounts of work experience would be less likely to use inappropriate e-mail addresses than individuals with less experience.

Current Study

The purpose of this study was to test whether applicant e-mail addresses are related to their owners' job-related qualifications. Judges rated the work-related appropriateness (inappropriate, questionable, and appropriate) of over 14,700 e-mail addresses from applicants who had completed an online battery of tests when they applied for jobs in a U.S. manufacturing distribution center. The judges then coded the content of the e-mail addresses, identifying specific unprofessional terms and phrases. Then the ratings, codes, and test scores were compiled for each e-mail address, and we tested whether applicants with inappropriate, antisocial, or otherwise unprofessional e-mail addresses scored lower on cognitive ability, Conscientiousness, professionalism, and work-related experience than applicants with more job-appropriate addresses.

Method

Participants

Participants included 14,718 individuals who had applied for entry-level jobs in a U.S. manufacturing distribution center. As part of the online application process, job candidates supplied their e-mail addresses and completed a battery of tests administered by SHL Group. Demographic information was removed from the data set, and domain names (i.e., @gmail.com or @yahoo.com) were removed from the addresses to ensure the applicants' confidentiality.

Procedure

SHL Group provided e-mail addresses for over 15,000 job applicants. The e-mail addresses were evaluated for appropriateness by 25 graduate students in the Industrial-Organizational Psychology program at Minnesota State University, Mankato. More specifically, each student was given approximately 600 addresses and was asked to "categorize each address into one of three groups," including, "inappropriate when applying for a job," "questionable," and "appropriate when applying for a job."

We tested the interrater reliability of the appropriateness ratings by asking 23 of the students to rate the appropriateness of the same 100 e-mail addresses. The intraclass correlation (absolute value) for a single measure was ICC (3, K) =.56, F (99, 2079) = 35.78, $p < .001$. The intraclass correlation (absolute value) for average measures was ICC (3, 1) = .965, F (99, 2079) = 35.78, $p < .001$. Thus, there were relatively high levels of agreement among the raters regarding the appropriateness of the e-mail addresses.

Next, the experimenters and three judges examined a random sample of 1,000 e-mail addresses. These judges created a coding scheme identifying two general theme categories and 14 subtheme categories. The first theme category was an antisocial/deviant theme. This category included the subthemes craziness/insanity, drugs/alcohol, the devil/other demonic entities, sex, and criminality/toughness/violence. The second category was labeled otherwise unprofessional. Subthemes included self-promotion, interests/hobbies, relationships with others, inspirational messages, popular culture, self-labeling youth reference (addresses containing "little, lil, baby, boi, boy, girl, or girlz"), science fiction/geeky/nerdy references, cutesy references, and odd/immature references.

Then, 25 students were each asked to code 600 e-mail addresses using the coding scheme.

The first author subsequently reviewed the content codes for all 15,000 addresses and identified possible coding problems (mistakes, peculiar judgments, etc.). He presented the problems to a panel of three raters who discussed the rating and voted on final coding(s) for each problematic address.

Finally, SHL Group provided the test scores corresponding to each e-mail address. The appropriateness ratings, content codes, and test scores were then merged into a single file. We eliminated applicants who were missing two or more tests scores, leaving 14,718 participants. See Table 1 for themes, subthemes, and example addresses. We will note that all of the example e-mail addresses used throughout this paper could be found in the study data set. We changed the address slightly to protect the applicants' anonymity, but we maintained the address meaning. So yes, people really do apply for jobs with addresses like crazybioch@mail.com.

Measures

Cognitive ability. This 40-item measure of cognitive ability is used for the selection of entry-level employees into various positions across several indus-

Table 1
E-mail Content Coding Themes and Subthemes

Overall theme	Subtheme	Number	Percentage of total	Example
Antisocial		433	2.9%	
	Craziness/insanity	73	0.5%	insanekid2011
	Sexual	180	1.2%	free2rocku
	Demonic/devil	38	0.3%	lilwhitedevil
	Drugs/alcohol	54	0.4%	eightballjunkie
	Bad/mean/tough	136	0.9%	megabeastzombie
Otherwise unprofessional		3,230	21.9%	
	Self-promotion	737	5.0%	bballstud_23
	Odd/immature	522	3.5%	armpitfart
	Interest/hobby	1,000	6.8%	beatles4ever
	Relationship to other	163	1.1%	bestdadever12
	Inspirational	165	0.8%	servent4christ
	Popular culture	184	1.3%	ilovalamp45
	Youth reference	223	1.6%	babygrl19
	Sci-fi/geeky/nerdy	146	0.3%	cyborg8679
	Cutesy	419	2.8%	teddybear2135

Note. Total number of subthemes outnumbers total for overall theme due to e-mails containing more than one subtheme code

tries. This speeded test measures an applicant's ability to follow detailed directions in a relatively short amount of time. In addition, for entry-level positions the measure has an observed criterion-related validity coefficient of $r = .15$ using a criterion of supervisor ratings of overall performance (SHL Group, 2011).

Conscientiousness. The Conscientiousness scale used in this study is designed to discriminate between applicants who have the tendency to be aware of and follow company policies and procedures, including: working in an organized manner, returning from meals and breaks on time, and working when coworkers are not working. The scale contains 33 items. The Conscientiousness measure has been shown to have an observed validity coefficient of $r = .14$ using the criterion of supervisor ratings of overall performance (SHL Group, 2011). A sample item reads, "You are very cautious in most things you do."

Professionalism. The Professional Potential Scale was designed to predict which applicants will be successful across a variety of jobs and industries. This measure contains biodata items related to applicants' achievements, social orientation, and aspirations. Although the criterion-related validity for this measure is higher for more advanced positions, it is reasonably predictive of entry-level job performance, as demonstrated by the observed validity coefficient of $r = .20$ using supervisor ratings of overall job performance as the criterion. A sample items reads, "In the last 6 months, how many times have you been late for a work appointment?"

Work-related experience. This measure assesses applicants' personal attributes related to success in clerical or front-line customer service posi-

tions. Biodata items reflect applicant developmental influences, academic history, and accomplishments in work-related situations. These types of behaviors are positively correlated with job performance in clerical or customer service positions (SHL Group, 2011). For the positions of interest, the observed criterion-related validity coefficient is $r = .13$.

Overall score. The overall score is a weighted combination of an applicant's scores on the tests mentioned above and two closely related measures: achievement and reliability. Because achievement and reliability are so similar to the other measures, we did not create additional hypotheses for these scales nor did we examine them separately.

Results

Appropriateness Ratings

One-way ANOVAs and Hochberg GT2 post hoc tests were used for the comparison of test scores across appropriateness rating groups. The Hochberg test is useful where there are the large differences in cell sizes. We found a significant group effect for cognitive ability, Conscientiousness, professionalism, work-related experience, and the overall measure. Means for these analyses are in Table 2. With the exception of cognitive ability, the applicants whose e-mail addresses were rated appropriate scored higher than the applicants whose e-mail addresses were rated as questionable or inappropriate. Next, we examined the test scores across the content category themes.

Table 2

Mean Test Scores for Rating Groups

Test	Ratings			F sig.
	Inappropriate	Questionable	Appropriate	
Cognitive ability	42.16a	41.31	42.95a	$p < .01$
Conscientiousness	43.01a	44.83a	46.39	$p < .01$
Professionalism	34.14a	35.72a	37.41	$p < .001$
Work-related experience	34.16a	37.34b	41.86	$p < .001$
Overall score	41.26a	43.30a	47.11	$p < .001$

Note. Within each row, values not sharing a subscript are significantly different from one another. Cognitive ability F (F (2, 14713) = 5.57, $p < .01$), Conscientiousness (F (2, 14713) = 9.18, $p < .01$), professionalism (F (2, 14713) = 10.09, $p < .001$), work-related experience (F (2, 14713) = 53.79, $p < .001$), and the overall measure (F (2, 14513) = 40.58, $p < .001$).

Content Themes

We eliminated cases with overlapping codes (some addresses contained antisocial terms and other types of unprofessional terms or phrases) and compared test scores of job applicants who had antisocial only codes, otherwise unprofessional only codes, and neither antisocial nor unprofessional codes (control). Again, one way ANOVAs and Hochberg GT2 post hoc tests were used for tests score comparison. For all of the test scores except cognitive ability, the

applicants with antisocial references in their e-mail addresses scored lower than those with neither type of reference (control). Applicants with addresses that contained other types of unprofessional references scored lower than the control group for the overall score and work-related experience. See Table 3.

Table 3
Mean Test Scores for Content Theme Groups

	Content coding category			F sig. value
	Inappropriate	Questionable	Appropriate	
Cognitive ability	42.93a	42.52a	42.21a	$p = ns$
Conscientiousness	42.81a	44.39ab	46.01b	$p < .005$
Professionalism	33.72a	35.60ab	36.93b	$p < .01$
Work-related experience	34.08a	36.62a	40.71	$p < .001$
Overall score	41.20a	43.13a	46.05	$p < .001$

Note. Within each row, values not sharing a subscript are significantly different from one another $p < .05$. Cognitive ability F (F (2, 14713) = .26, p = ns), Conscientiousness (F (2, 14713) = 5.89, $p < .005$), professionalism (F (2, 14713) = 5.09, $p < .01$), work-related experience (F (2, 14713) = 29.06, $p < .001$), and the overall measure (F (2, 14713) = 17.31, $p < .001$).

Subthemes. We next explored overall test scores for individuals whose e-mail addresses contained specific content subcodes. For these tests, we included all of the participants whose e-mail fell in a specific code group (so long as there were at least 100 cases) and a random sample of the same number of participants whose e-mails were code free and rated appropriate. As can be seen in Table 4, 6 of the 10 subcategories in the otherwise unprofessional theme scored significantly lower on the overall measure. We limited the analyses to the overall measure so as not to overemphasize the importance of any one word or phrase as a predictor of a specific personality trait. Results were, however, interesting.

Table 4
Mean Overall Test Scores for Specific Content Subtheme Groups

Subtheme	N	Code group	Control group	T	DF	p
Youth reference	209	36.21	46.29	3.68	422.8*	$p < .001$
Sexual	176	37.66	44.07	2.19	352	$p < .05$
Love/inspirational	157	38.26	46.83	2.76	320	$p < .01$
Cutesy	416	40.21	45.63	2.78	829	$p < .01$
Sci-fi/geeky/nerdy	136	42.27	51.83	2.94	280	$p < .005$
Bad/mean/tough	133	42.59	45.19	0.73	266	$p = ns$
Popular culture	182	43.00	48.35	1.73	361	$p = ns$
Odd	518	43.22	47.15	2.23	1,025.4*	$p < .03$
Interest/hobby	994	44.09	46.06	1.56	1,975	$p = ns$
Relationship to other	162	45.35	45.71	0.11	318	$p = ns$

Note. A different random sample of professional group members was drawn for each code subtheme group comparison. The groups were matched on the *n* of the subtheme group.

Discussion

Applicants with e-mail addresses that were rated by judges as either questionable or inappropriate scored lower on most of the preemployment tests than people whose addresses were rated appropriate by judges. The test score differences between individuals with questionable versus inappropriate e-mail addresses were minor. That is, there is not as strong a distinction between questionable and inappropriate e-mail addresses as there is between appropriate e-mail addresses and either of the less professional groups.

There was a similar pattern of results when we compared applicants with antisocial and otherwise unprofessional terms in their address to a control group whose members did not have any unprofessional reference in their addresses. The applicants with antisocial references scored lower than the control for all of the variables except cognitive ability. The applicants with otherwise unprofessional terms in their addresses scored lower on experience and the overall measure.

The findings for Conscientiousness are congruent with previous research in that individuals who are evidently less concerned with social desirability score lower on the measure of Conscientiousness. The same is true for professionalism; those who post inappropriate things on social networking sites, or in this case apply for a job with a less than professional e-mail address, score lower on professionalism than those who do not. As expected, individuals with no unprofessional references scored higher on the measure of work-related experience than those with either type of unprofessional reference.

There were no significant differences in cognitive ability between individuals with or without antisocial/deviant e-mails and with or without otherwise unprofessional e-mail addresses. We were surprised that cognitive ability was not consistently related to the appropriateness of the e-mail addresses. One possibility is that some of the inappropriate e-mail addresses could have been created by bright kids with nonconformist or antisocial tendencies. We pictured the kind of kids who pride themselves in their idiosyncrasies and enjoy shocking their parents and peers. Certainly more research could be done in this area.

After coding 15,000 e-mail addresses, we were able to draw a few additional conclusions about job candidates and their addresses. For instance, the most professional e-mail addresses simply included the applicant's full name, but this did not always help candidates like Davis Slow, John Hardman, or Earnest Seldom.

Many e-mail addresses can be blamed on the whims of youth (VarsityBoy, MrThundercat, ArmpitFart). However, it is easy to obtain a new e-mail address. Failing to change an unprofessional address may tell us just as much about an applicant as choosing an inappropriate address as an adult.

There were also addresses that simply made us smile: the ironic: TheOne224; the literal: RememberThisName; the oblivious: IMGenuis; the equivocal: Suesoiler; and the maddening: johnallcaps.

Implications

The findings of the study are important for both employers and job applicants. For employers the findings might generalize to other jobs and suggest that applicants with unprofessional sounding e-mail addresses may score lower on preemployment tests and therefore be less qualified than applicants with professional or neutral e-mail addresses. However, we would caution the hiring manager who wants to use only e-mail addresses to screen applicants. Although there are significant differences between applicants with appropriate versus questionable or inappropriate e-mail addresses, the effect sizes are not large. There is a difference of roughly 10% between the high and low group means on each of the measures. Thus, rather than using e-mail addresses to screen applicants, we suggest viewing the less-than-professional e-mail address as a yellow flag. Let the preemployment tests or other forms of applicant qualifying measures (e.g., resumés, interviews) inform the hiring decision, but keep an eye on individuals with less than professional e-mail addresses throughout the hiring process.

As for applicants, we can offer this advice: if you are using an unprofessional e-mail address, change it. There appears to be no advantage and potentially many disadvantages to using an antisocial or otherwise unprofessional e-mail addresses when applying for a job. Further, references to 420, 69, 666, 8 balls, and crunk are not exactly inside jokes. It is free and relatively easy to create a new e-mail address so there is no excuse for applying for a position using an e-mail address like demonseed@mail.com.

Limitations

A limitation of this study is that students conducted the ratings of appropriateness. Although these students are well informed about hiring rules and practices, they had very limited experience in hiring settings. It would be wise to test the results with seasoned hiring managers.

Another limitation of this study is that we did not have access to the hiring decision for each applicant. If we had been able to access this information, we could have tested the differences in hiring rates between applicants with appropriate, questionable, and inappropriate e-mail addresses. This would have allowed insight into recruiters' perceptions of the applicants.

One more limitation of this study is the absence of demographic information regarding the applicants. We suspect that some of the less professional e-mail addresses are a byproduct of youth. However, without access to the applicants' age or gender, we could not make any conclusions regarding what types of applicants are more or less likely to have inappropriate e-mail addresses.

Further Research

The possibilities for additional research in this area are exciting. It would be interesting to examine the applicants' decision making regarding the

choice of e-mail address. Do e-mail addresses reflect Jones and Pittmans' (1982) self-presentation taxonomy including ingratiation, intimidation, self-promotion, exemplification, and supplication? Researchers could also examine recruiters' impressions, hiring decisions, and applicant job performance in relationship to applicants' e-mail addresses. Research on recruiters' impressions could be done by giving recruiters equivalent resumés sent from different e-mail addresses and testing recruiters' preferences. Examining hiring decisions in relation to applicants' e-mail addresses would allow researchers to determine whether applicants with appropriate e-mail addresses are selected at a higher rate than applicants with less appropriate e-mail addresses. Finally, testing the relationship between applicants' e-mail addresses and their on-the-job performance would allow researchers to determine whether it is valid to screen applicants based on their e-mail address.

Finally, 5% of the applicants in our study had an e-mail address that included a date that could be interpreted as a birthday or graduation date. This made us ask how employers should handle information contained in e-mail addresses that identifies the applicants' age, parental status, religion, sexual orientation, or ethnicity (KristiesMom, KingJames12, GayProudNow, PuertoRic1959)? Perhaps e-mail addresses need to be electronically screened for information regarding personal information and protected classes.

Conclusion

Exploring the relationship between applicants' e-mail addresses and various personnel selection measures and metrics will allow researchers and practitioners to better understand the differences between applicants with professional versus unprofessional e-mail addresses. Moreover, conducting further research related to applicant e-mail addresses may allow practitioners to incorporate applicant e-mail addresses into a selection system.

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