

How Do You Like Me Now?: An Image-rating Study of Librarian Approachability

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Introduction

According to the American Library Association's (ALA) guidelines for the behavioral performance of reference and information service providers, an important component of a successful reference interaction is that a librarian be approachable.¹ Yet, beyond the commonly accepted techniques of smiling, making eye contact, and having an open posture, little is known about what a librarian can do to increase her/his approachability. Does dressing up/down or wearing a nametag make a librarian appear more or less approachable? Does clothing color make a difference? What about the times that a librarian is occupied with other endeavors: does it matter whether s/he is looking at a book versus a computer? This paper presents a study that addressed these questions, and provides suggestions for enhancing librarian approachability in public service contexts.

Literature Review

Psychological studies conducted outside of the library setting have identified key features of approachability as category- and cue-based judgments.²⁻⁹ Category-based judgments rely on demographic traits, such as gender, race, and age, while cue-based judgments are associated with perception signals, such as emotional expression and direction of attention. Several studies in the field of librarianship have observed category-based trends that influence users' decisions to approach a librarian.¹⁰⁻¹³

Largely missing from this body of research are controlled analyses of factors outside demography that specifically address perceptions of approachability prior to user engagement with a librarian. Matthew Saxton¹⁴ systematically examined the applicability of several behavioral factors associated with the ALA guidelines for excellence in reference service (i.e., librarian readiness, interest, understanding, and verification). He found that these factors did in fact affect patron experiences with reference service. However, approachability was not treated as a singular, independent variable; rather, characteristics of approachability were combined with other variables into an aggregate factor of behavioral attributes, rendering it difficult to discern the effect of approachability in and of itself. Michele Potter¹⁵ designed her Master's thesis to explore a variety of treatments that could potentially affect patron perceptions of librarian approachability in a service setting, including clothing and behavioral characteristics. She found that these factors did indeed have an impact on the experience of library patrons seeking assistance; however, she tested the perceptions of only one librarian, which may have affected the generalizability of the results. A small number of additional studies have looked at behavioral trends that affect a patron's choice to approach a librarian, although results have been mixed.¹⁶⁻¹⁸ These studies go beyond demography to indicate that individual librarian behaviors do affect patron perceptions of approachability. However, they also suggest a

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need for further research on specific approachability factors that lead to user engagement with a librarian, and that examines a broad range of librarians and library users.

We conducted an image-rating study to assess how visibly salient, cue-based characteristics of hypothetical librarians can influence patrons' perceptions of librarian approachability. The study emphasized factors that librarians can readily change on a day-to-day or even moment-to-moment basis: affect and clothing. Using a subset of previously rated images, we carefully balanced demographic characteristics (i.e., gender, age, and racial/ethnic affiliation) in order to test a diverse sample of hypothetical librarians. Results of this study expand the extant research on behaviors that librarians can modify to enhance their approachability.

Methodology

Over the course of four weeks in March 2012, we distributed an online image-rating survey to a wide range of library users at a large, Midwestern university. Image rating is the primary method for approachability studies in the field of Psychology.¹⁹⁻²¹ With this method, we were able to hold many potentially confounding factors constant, including body posture, library setting, and image layout, while systematically varying librarian affect and clothing.

Raters

There were 1,015 participants who responded to the anonymous survey throughout the 3-campus university system, including students, faculty, and staff across gender, race, and age categories. There were 730 female, 282 male, and 3 transgender raters. Fifty-nine respondents identified themselves as African American or Black, 144 as Asian or Asian American or Pacific Islander, 681 as White (non-Hispanic), and 131 placed themselves in additional categories including "Other." Within this sample, 61% were undergraduates, 27% graduate students, and 12% faculty, staff, or other affiliation.

Images

Affect and clothing treatments were primarily drawn from the Psychology literature on social judgment formation. In particular, facial expressions and directions of gaze provide powerful social cues, while clothing color and formality of clothing carry mean-

ing and social salience for observers. For this study, treatments included facial expression (smiling or neutral), direction of gaze (forward-facing, looking down at a book, looking down at a computer), formality of clothing (dressed up or down, or wearing a nametag), and clothing color (blue, red, or white shirt). A subset of images was used from a baseline assessment conducted during the Fall of 2011.²² These included full color images of hypothetical librarians displaying: neutral facial expressions; clothing uniformity; and situational parity (facing forward, sitting at a desk with a computer on the desk). The faces for the images were downloaded from multiple image databases, in order to compile a large set of faces with diverse demographic characteristics. Most faces were obtained from the National Institute of Standards and Technology Color FERET database.^{23,24} A smaller number of faces were drawn from the University of Texas Center for Vital Longevity Database²⁵ and the European Conference on Visual Perception.²⁶ Several stock photos were purchased to guarantee that equal numbers of demographic variability were present (i.e., gender, age range, and racial/ethnic affiliation).

A subset of 12 images was selected from the baseline data set for the current study. These 12 images had similar baseline approachability ratings, between 5.32 and 5.96 (on a scale of 1 to 10). The 12-image subset was balanced for gender, age, and race. Specifically, the baseline image count consisted of 6 male and 6 female targets for the gender category, 6 younger and 6 older targets for the age category, and 4 White, 4 African American, and 4 Asian targets for the race category. With this setup, each combination of demographic categories (e.g., male-younger-White) was represented by 1 image. The images were then manipulated to test attire and affect. Each image displayed only one variable adjustment versus the baseline image. Smiling images were available for all targets in the databases described above. Adobe Photoshop was used to modify the other variables of interest. An example question is provided in Figure 1.

Design and Procedure

The current study was conducted online, with the survey made available to a 3-campus university system at a large, public Midwestern university. Qualtrics survey software was used to develop and administer the survey. Given the large number of images tested (96 total), we reduced participant burden by splitting

FIGURE 1
Example Survey Question



the images into two groups, so that each participant who clicked on the link to the survey was taken to one group of images or the other. Images were presented in randomized order for both Group 1 and Group 2. The same 12 baseline images were rated in both groups; however, between the two groups, different images were varied with respect to affect and clothing. Group 1 yielded 514 participants, and Group 2 yielded 501 participants.

The survey was accessible over a 2-week period during the Spring of 2012, and raters were offered an incentive to enter a raffle for one of ten \$50 gift cards upon completion of the anonymous survey. Each respondent was introduced to the survey and shown a page of the 12 baseline images as a familiarization step. Respondents then rated the full set of images. Images were presented one-at-a-time, in a different random sequence for each rater, for a total of 54 images of hypothetical librarians in each survey (all 12 baseline images plus 42 with a changed variable). Each image included both a photograph and the following verbal instructions: “Imagine you need to ask a librarian a question. Rate the approachability of this librarian.” Raters scored the target image’s approachability on a Likert scale of 1 to 10, with 1 being “Least approachable” and 10 being “Most approachable.” See Figure 1 for an example. After they completed the image ratings, raters were asked 4 demographic questions regarding their gender, age, race/ethnicity, and affiliation with the university. Lastly, raters were asked 5 questions regarding their personality charac-

teristics. After completing the survey, raters were prompted to click on a link that took them to a web page where they were able to enter the gift card raffle. Median survey completion time, not including time to enter the raffle, was approximately 9 minutes.

This dataset is the same one analyzed in Bonnet and McAlexander,²⁷ except that for the current study, the treatments are aggregated for all demographic variables (instead of separating demographics), and the effects of university affiliation are assessed as described below.

The ranking of approachability factors was achieved by using a hierarchical linear model (HLM), in order to characterize the differences in the image approachability ratings among the treatments (e.g., smiling face, or red shirt). The HLM model for this

analysis follows:

Level 1 (Treatment Level):

$$Y_{i,j} = b_{0j} + b_{1j} * X_{ij} + e_{ij}$$

Level 2 (Rater Level):

$$b_{0j} = g_{00} + g_{01} * Z_j + u_{0j}$$

$$b_{1j} = g_{10} + g_{11} * Z_j$$

Mixed Equation:

$$Y_{i,j} = g_{00} + g_{01} * Z_j + g_{10} * X_{ij} + g_{11} * Z_j * X_{ij} + u_{0j} + e_{ij}$$

Where $Y_{i,j}$ is the image approachability rating for the i th treatment nested within the j th rater, respectively, X is the treatment category (e.g., smiling, or red shirt), and Z is the rater category (university affiliation: undergraduate student, graduate student, or faculty/staff). With this model, image approachability ratings for a given treatment that repeat for each rater were entered at Level 1, and rater-specific categories were entered at Level 2. In the Level 1 equation, β indicates treatment-level intercept and coefficient. In the Level 2 equations, γ indicates rater-level intercepts and coefficients. The e term represents random error associated with treatment-level effects (i.e., residual error), and the u term represents a random effect for each rater. When the Level 2 components are combined algebraically with the Level 1 equation, the mixed equation incorporates main effects of X and Z , as well as cross-level interactions between X and Z . The main and interaction effects for this type of model are reported relative to the reference value of each variable. The reference value for the treatment-level variables was set to the baseline image, and the ref-

erence variable for rater categories was set to undergraduate student.

Results

The HLM results for all raters combined are presented in Table 1 and Figure 2. Note that each participant in the study rated the baseline images for all 12 hypothetical librarians, as well as an array of images of the same librarians with different treatments. Thus, it is possible to report approachability ratings for treatments as greater than, less than, or equal to the rating for the baseline image. The y-axis on Figure 2 displays mean approachability ratings as plus or minus the baseline image value, with the baseline image value by definition set to zero (i.e., equal to itself).

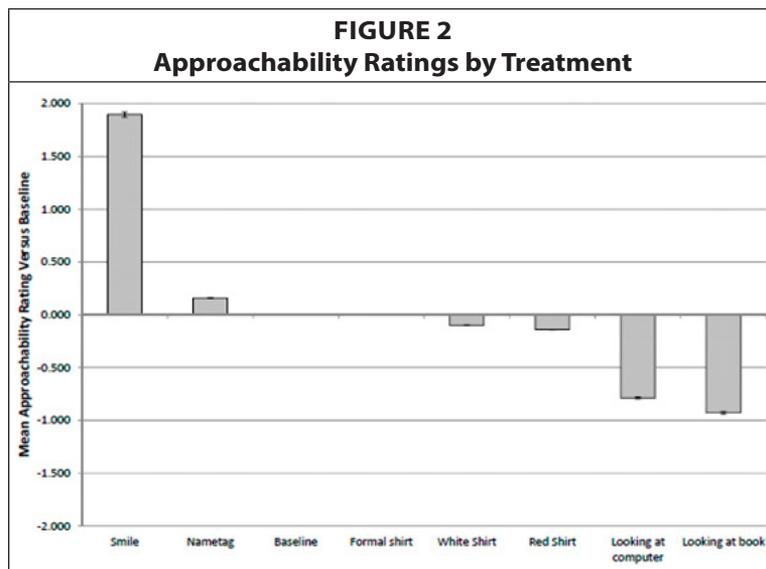
A statistically significant difference versus baseline was observed for all treatments except for the “formal clothing” treatment. Hypothetical librarians

displaying a smile were judged as more approachable than baseline, as well as hypothetical librarians wearing a nametag. The rest of the treatments, except for hypothetical librarians wearing a formal shirt, were judged as less approachable than baseline. This indicates that the baseline images were judged as relatively approachable by raters. Both of the treatments that manipulated shirt color (i.e., white and red) were judged less approachable than the baseline of a blue shirt. Both of the treatments in which hypothetical librarians were looking down received the lowest overall approachability ratings, with the treatment of looking down at a book having the lowest average value. Note that, while formal clothing was rated as overall statistically similar to the baseline of informal clothing, a separate data analysis presented in Bonnet and McAlexander²⁸ discovers that this is actually due to the “canceling out” of significant effects for various demographic groups.

The rater-level (i.e., undergraduate students versus graduate students versus faculty/staff) interaction effects are displayed on Table 2. Three of the treatments showed statistical significance for rater-level interactions: looking down at a computer, looking down at a book, and wearing a formal shirt. For both of the direction-of-gaze treatments, all interaction effects were negative. This indicates that, while all rater groups considered these two treatments as less approachable than baseline, the effect was especially strong when graduate students and faculty/staff rated the images (Figure 3 and Figure 4). For the formal clothing treatment, the interaction effect was negative for graduate students, and positive for faculty/staff. As shown on Figure 5, the interaction effects with opposite sign are another example of the “canceling out” of effects. This result suggests that the various user populations do not agree on whether formal clothing increases or decreases librarian approachability versus baseline (informal shirt).

TABLE 1
Image Hierarchical Linear Model Results for All Raters Combined

Image Treatment	Coefficient	95% Confidence Interval	P > z
Looking at Computer	-0.79	+/- 0.04	0.000
Looking at Book	-0.93	+/- 0.04	0.000
Smiling	1.90	+/- 0.04	0.000
Nametag	0.16	+/- 0.04	0.000
Formal Shirt	0.00	+/- 0.04	0.884
Red Shirt	-0.14	+/- 0.04	0.000
White Shirt	-0.10	+/- 0.04	0.000



Discussion

In the following discussion we will delve deeper into the results described above. This discussion includes recommendations

TABLE 2
Image Hierarchical Linear Model Results for Rater University Affiliation

Rater Category	Effect Type	Coefficient	95% Confidence Interval	P > z
Undergraduate	Main	-0.71	+/- 0.05	0.000
Graduate Student	Interaction	-0.11	+/- 0.10	0.026
Faculty/Staff	Interaction	-0.39	+/- 0.14	0.000
Undergraduate	Main	-0.80	+/- 0.05	0.000
Graduate Student	Interaction	-0.24	+/- 0.10	0.000
Faculty/Staff	Interaction	-0.49	+/- 0.14	0.000
Undergraduate	Main	1.92	+/- 0.05	0.000
Graduate Student	Interaction	-0.04	+/- 0.10	0.409
Faculty/Staff	Interaction	-0.11	+/- 0.14	0.120
Undergraduate	Main	0.18	+/- 0.05	0.000
Graduate Student	Interaction	-0.04	+/- 0.10	0.471
Faculty/Staff	Interaction	-0.09	+/- 0.14	0.190
Undergraduate	Main	0.01	+/- 0.05	0.752
Graduate Student	Interaction	-0.10	+/- 0.10	0.038
Faculty/Staff	Interaction	0.15	+/- 0.14	0.036
Undergraduate	Main	-0.12	+/- 0.05	0.000
Graduate Student	Interaction	-0.08	+/- 0.10	0.122
Faculty/Staff	Interaction	0.00	+/- 0.14	0.973
Undergraduate	Main	-0.07	+/- 0.05	0.014
Graduate Student	Interaction	-0.09	+/- 0.10	0.081
Faculty/Staff	Interaction	-0.06	+/- 0.14	0.359

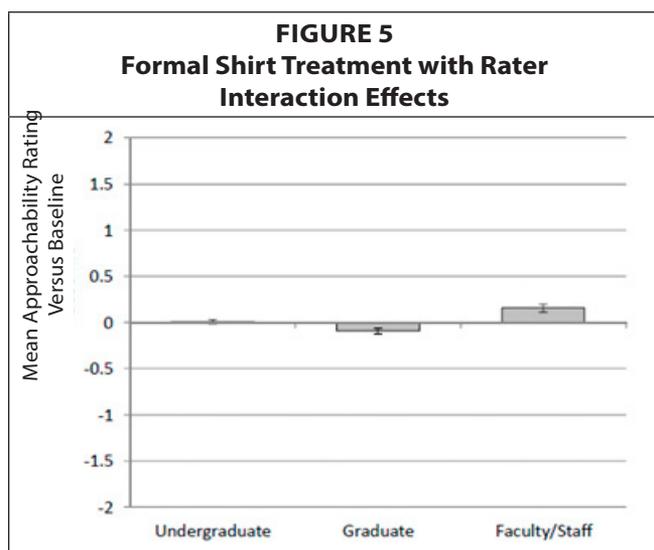
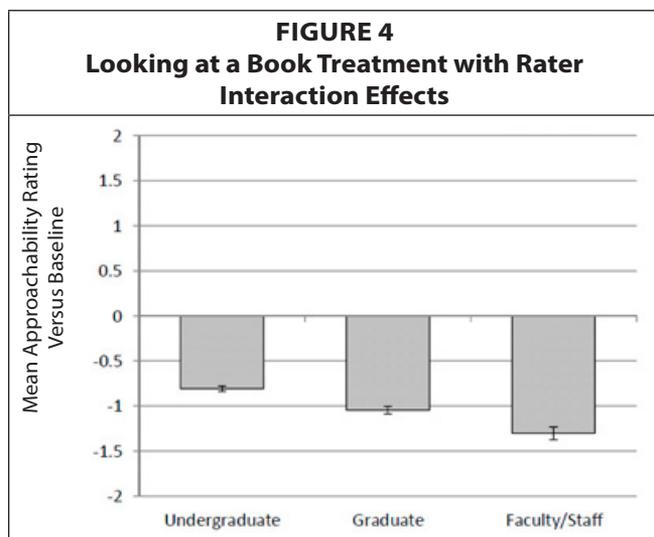
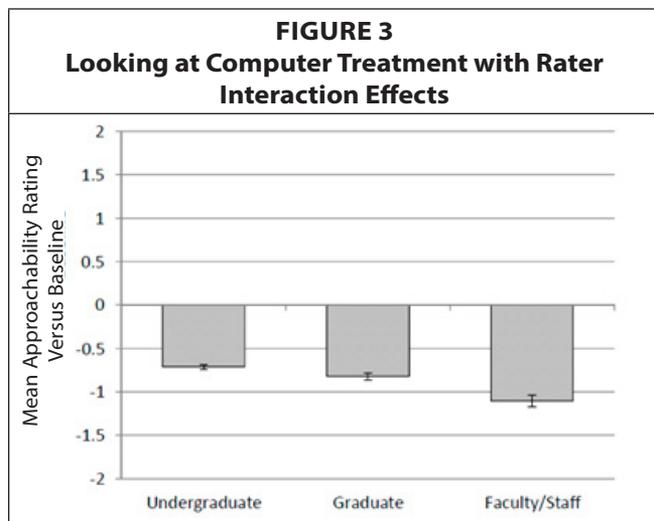
for practice, with the assumption that the trends observed in this image-rating study extend to the real-life environment of the library.

Smiling had a positive effect across all rater groups, demonstrating that no matter the university affiliation of the patron, participants tended to consider smiling librarians as having increased approachability versus baseline (i.e., neutral expression). Additionally, this was the variable with the largest magnitude of effect (either positive or negative). In other words, smiling made the most difference of all of the treatments, which reveals the uniquely powerful effect that smiling might have on patron perceptions of librarians. As a result, our recommendation for librarians who wish to maximize their perceived approachability in public service settings is to smile when making eye contact with patrons.

Librarians who wore a nametag came in second (albeit a distant second) in the ranking of tested treat-

ments. This finding suggests that patrons consider an explicit indication of a librarian’s role as a public service provider to be approachable. Thus, our recommendation for librarians at public service desks is to wear a nametag.

The effect for formal clothing was complex. At first glance, wearing a formal shirt versus a casual shirt appeared to make no difference. However, when we looked closer at the interaction effects for this variable,²⁹ we saw that this supposed parity was actually masking the competing effects of the formal shirt treatment on different gender and age categories of the hypothetical librarians. In particular, we found that wearing formal clothing increased the approachability of male librarians, while it decreased the approachability of female librarians. In another twist, we found that younger librarians were considered less approachable when they wore formal clothing (versus their casual wear), whereas older librarians were



considered more approachable when wearing formal clothing. There may have been a similar phenomenon occurring within the race category, but not all interaction effects were significant. For the formal clothing treatment, we do not have a recommendation for practice because the observed patterns are contingent upon characteristics that are outside the control of librarians (i.e., their demographics).

Wearing a red or white shirt resulted in lower approachability scores, versus the blue shirt that served as the baseline. These findings were counter to expectations. In a study by Roberts et al.,³⁰ participants rated targets wearing red shirts as more attractive than the same targets wearing white shirts (in fact, these colors ended up on opposite ends of the attractiveness spectrum). Given that attractiveness correlates to some degree with approachability,^{31,32} the authors expected that a red shirt would also increase perceptions of the approachability of hypothetical librarians. Instead, the results indicated the opposite trend; hypothetical librarians wearing red shirts were perceived as less approachable than those wearing the other two shirt colors. Perhaps this trend is related to the trait of “dominance” that can be associated with the color red.³³ It is possible that in a library context, red is perceived as dominant and thus, less approachable. Our recommendation is to follow the hierarchy of approachable colors that emerged from this study, from most to least approachable: blue > white > red.

Looking away from patrons is a behavior that occurs frequently at points of service. Thus, we tested whether or not there was a difference in approachability ratings for two types of activity in which librarians often engage when not making eye contact with patrons. Overall, looking down, whether at a computer or a book, was considered less approachable than the baseline (i.e., looking forward, and making eye contact). In fact, this was the least approachable behavior in the set of treatments tested. Given that the overall ratings for looking down placed looking at a book in last place, we suggest that librarians who want to multi-task while providing service at a reference desk would be better off looking at a computer than a book.

The rater-level effects suggest that graduate students and faculty/staff are especially negatively affected by librarians looking down. This is not to say that undergraduate students found hypothetical librarians looking down to be approachable; undergraduates, on average, also rated images with this treatment as less

approachable than baseline. However, the negative effect was even stronger for graduate students and faculty/staff. If these trends extend to the actual reference desk, it is an indication that graduate students and faculty/staff would be especially receptive to eye contact with a librarian prior to the reference encounter.

Implications for Library Service

The results of this study suggest that patrons do consider visually salient behavioral characteristics when judging the approachability of librarians. These findings add much-needed data to our understanding of first impressions in reference encounters. In addition, these findings present valuable information that librarians can readily incorporate into their behaviors in public service environments. However, we do not feel that the outcomes of this study necessarily merit policy changes for a couple of reasons. Firstly, in certain cases, there is the potential for discriminatory practice (for example, by asking librarians to wear specific types of clothes based on their gender or age). We find this practice inappropriate, particularly considering the important role that the library plays in empowering diverse populations.³⁴ Secondly, not only do the actions we take affect patrons' perceptions of us, but they can affect our own opinions of ourselves.³⁵ Thus, we feel that individual librarians are in the best position to make a decision regarding how they want to implement any given recommendation.

Conclusion

Whether or not a librarian appears approachable to patrons is essential to service provision, and presents a first impression that could have an enduring effect on the reference interaction. This study found that factors associated with attire and affect (i.e., factors within the control of an individual librarian) influenced perceptions of approachability. We anticipate that these findings will be directly applicable to reference environments, providing librarians with a range of factors from which to choose when considering enhancements of perceptions of approachability. Additionally, these results enrich our understanding of interpersonal communication and social judgment formation in library contexts.

Notes

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