Investigating the Extent to Which Profile Pictures Affect First Impressions in Online Messaging Environments

Word Count: 4,590

Introduction

With an increased usage of online conversation spaces in recent years, the importance of optimizing someone's first impressions on others is growing as well. One of the most prominent influences of first impressions in such settings are profile pictures (Turner & Hunt, 2014). Similar to physical appearances, profile pictures are one of few online indicators from which first impressions can be formed, especially because they are often the first thing people see before even interacting with someone. Additionally, the impact of first impressions is lasting. According to a study by Gunaydin et al. (2016), first impressions from a short interaction can endure beyond a month later. This means that the picture someone chooses to represent themselves can significantly impact how they are perceived by others.

Literature Review

Determining a person's personality traits from their physical appearance is a highly investigated topic within the realm of psychology (Haxby et al., 2000; Hehman et al., 2017; Stolier et al., 2018). After all, the assumption of someone's character or personality from external features can have large consequences on first impressions. Studies in this field have primarily focused on the attribution of personality traits based on people's physical appearance. Although someone's outward appearance consists of many factors, most researchers choose to investigate the face. Vernon et al. (2014) found that the position of features within the face had a large impact on first impressions. Similarly, Sutherland et al. (2015) observed a strong relationship between facial cues and first impressions of personality, discovering that, for example, expressions such as smiling can improve a person's perceived approachability. This link does not exist for only human raters, however. Kachur et al. (2020) constructed an artificial neural network to predict personality features from the faces of both men and women, finding a high

correlation between human-perceived ratings and those predicted by the neural network. From these researchers, it is evident that the relationship between a person's personality and physical appearance has been extensively studied. However, not as many studies have analyzed this connection in online spaces.

Physical appearances no longer "exist" in online environments. Rather, there are digital appearances, primarily consisting of methods of personalization such as usernames, bios—which are short biographical summaries—and profile pictures. Among them, profile pictures are certainly one of the more prominent forms since images can provide more readily available information than names or phrases. As such, researchers have investigated the relationship between these pictures and the first impressions that are formed from them, analyzing aspects such as photo content, type, and color, and discovering how these elements come together to influence human psychology.

From the many online environments that people engage with, social media platforms are certainly one of the more prominent forms, whether it is due to reasons such as large user bases or ease of platform access; this prominence remains true when examining profile pictures. A study by two researchers from the University of Portsmouth investigated the effect of Facebook profile pictures on perceived personality (Turner & Hunt, 2014). In the study, a group of participants rated 52 Facebook profile photos on perceived personality attributes, finding that physically attractive photos of people often correlated with more positive personality ratings (Turner & Hunt, 2014). Additionally, various aspects of the picture, such as smiling or having other people in the photo, significantly influenced the assessments made by the raters. This study, however, did not test a single aspect of profile pictures, but rather the general attractiveness of the person in the static photo. Given this limitation, it was difficult to draw a

conclusion outside of single-variable correlation, and instead, as a general judgment, they concluded that “profile pictures can strongly influence how we judge others.”

Lounsbury (2017) found more detailed results in her study involving 89 college students in psychology. The study presented participants with photos of people with different captions similar to those on social media. The photos consisted of both males and females from varying levels of attractiveness and were rated by participants. Lounsbury (2017) discovered that, compared to the contents of the photos, the captions had little impact on the final rating. Rather, aspects such as confidence and, of course, attractiveness had greater impacts on the raters’ perception of the person. She noted, however, that “these findings were not consistent with previous findings,” and that “they may still help provide evidence that this area of research is not yet complete.” This aligns with results from a related real-world study. Judge and Simon (2009) found that, in the workplace, the more attractive a person was perceived to be, the greater the benefits. More specifically, a person’s physical appearance resulted in direct benefits in income (Judge & Simon, 2009), providing a more concrete example of the potential effects of profile pictures. Continuing this, Liu et al. (2016) examined profile pictures on Twitter and observed a significant link between profile picture choice and personality traits. Furthermore, the researchers noted that the differences in picture choice, which involved varying facial expressions, “can be harnessed to predict personality traits with robust accuracy” (Liu et al., 2016).

The influence of profile pictures extends beyond just personality impressions, though. Another study focusing on Facebook PFPs found that, in the job market, “candidates with the most beneficial Facebook picture obtain approximately 38% more job interview invitations compared to candidates with the least beneficial picture” (Baert, 2017). Only two significant

factors of employment were present in the experiment: the person's resume and their Facebook picture. To eliminate extraneous variables, the researchers created multiple sample resumes and tested each photo, resulting in the only discrepancy between candidates being their profile picture. As such, the importance of profile pictures cannot be understated, especially in a work environment. In fact, Tifferet and Vilnai-Yavetz (2018) analyzed 480 profiles on the professional networking site LinkedIn and found that a majority of professionals sought to align their profile with common forms of self-presentation, which were defined by social and gender norms, to shape their impression. Both of these studies illustrate the impact of profile pictures on attributes other than personality.

However, despite the sheer amount of platforms observed and personal attributes analyzed, there is still a significant gap within these studies: the profile pictures only focus on people. None of the studies considered non-human profile photos. A quick glance at nearly any social media platform proves that profile pictures of a person's physical appearance are not the only type that exists, especially since having a physical picture of oneself is not required on any site. Thus, it is possible that other photo types may have different effects on first impressions, and other aspects of pictures can differently impact perceived personality. For example, Han et al. (2014) observed a significant impact of color on a person's actions when purchasing a gift. This alteration in activity indicates a notable shift in psychology caused by a discrepancy of color, which can potentially have similar results when observing pictures. Additionally, in a study by Nadkarni et al. (2017), researchers determined that nature media has a calming effect on people, especially on those in nature-deprived environments. Ballew and Omoto (2018) shared this sentiment about nature experiences evoking positive emotions. These different types of profile pictures, specifically nature photos and those of varying colors, can impact people's first

impressions in ways that have yet to be explored. To determine how and to what extent these two factors affect first impressions, a study that takes into consideration each one as individual variables must be conducted.

Methodology

To investigate the impact of a profile picture and its color on first impressions, I conducted a survey using a Likert scale to gather participant ratings. The use of a questionnaire allowed me to identify people's reactions to having a profile picture and the color of the photo by examining their feedback. I tested green and orange profile pictures through participant ratings of provided stimulus materials and analyzed the results to identify trends. While the Likert scale is a subjective metric, I was able to extract data by comparing the responses relative to each other without involving tangential observations. The questionnaire, including the stimuli, can be found in the Appendix.

The questionnaire was split into two main parts. The first half consisted of a consent form along with questions regarding demographic data about the participant's grade level, gender, preferred method of communication, extent of social media usage, and preexisting beliefs toward first impressions. In the second part, stimulus materials in the form of sample conversations between two imaginary individuals were provided, and participants were asked to evaluate a specified individual based on certain character qualities that were analogous to those measured in Baert (2017)'s study: extraversion, agreeableness, confidence, and competence. These traits were chosen as the metric for determining first impressions in my study due to their commonality with Baert (2017).

To reduce bias emerging from extraneous variables, the surveys varied in three ways: whether or not the evaluated individual had a profile picture, the color of the profile picture, and

the tone of the sample conversation of the evaluated individual. The responses of the with-profile photo and without-profile photo were my experimental variable and control variable, respectively. Comparing the responses from the two allowed me to determine the impacts of profile pictures. To account for the influence of photo color and conversational tone, these factors were varied in the stimulus materials. These steps were taken since the listed factors were the most prominent qualities in the graphic stimulus materials. I hoped that accounting for these factors would result in more stratified and clear data.

The questionnaire was approved by an Institutional Review Board and was taken by students at a comprehensive urban-suburban high school in Albuquerque, New Mexico through the help of teachers who distributed the survey in their classes without external incentives for completion. High school students were chosen due to their generational trends. More specifically, since most high schoolers have grown up in an age dominated by technology and online environments, they are likely to be familiar with the text formats and online exchanges presented, meaning that the questionnaire's stimulus materials were not foreign to the participants. Taking this precaution served to enhance the accuracy of my study as the participants would be less confused when compared to other age groups, though this was mostly speculative. This high school was chosen as a representative high school due to its diverse student body and proximity. Throughout the survey, the anonymity of the survey takers was preserved. The only demographic information that I gathered was gender and grade level for purposes of data analytics, neither of which, alone or combined, can be used to identify an individual.

The data was collected by asking participants to rate the individuals within the sample materials on a seven-point Likert scale for each quality separately. By using an odd number, it

was possible to easily gauge feedback in comparison to a whole number median, which in this case was four. Additionally, I chose a seven-point scale rather than the typical five to allow participants a greater range of expression during the evaluation process. The profile pictures used in the survey were chosen with the idea of varying colors and nature photos in mind. I decided to use green and orange instead of the red and blue combination found in Han et al. (2014) in order to replicate common colors found in nature scenery photos without worrying about problems with oversaturation that could arise from subject photos. Following suit, I used a picture of a forest for my green-colored photo and a picture of a desert for my orange-colored photo. These steps were taken to minimize potential bias from unnatural nature photos which would have been present if a color such as red was used. Lastly, the tones in the stimulus conversations had two types: a positive tone and a neutral tone. To do this, each message was judged by IBM Watson's Tone Analyzer, minimizing human bias involved in the creation of the stimulus materials, similar to Al Marouf et al. (2019). I opted to use IBM Watson as it is a natural language processing artificial intelligence that extracts tones and emotions from text through linguistic analysis and deep learning (*IBM Watson Natural language understanding*, n.d.). Finally, permutations of each of these three variables were created and randomly assigned to participants in the survey so that each person was exposed to a pair of only two of the eight total samples.

I hypothesized that the presence of a profile picture will improve perceived impressions by the participants in a positive way, resulting in higher ratings in qualities such as extraversion, agreeableness, confidence, and competence. Although the absence of a picture may not act as a detriment, I anticipated that having a photo will be beneficial in improving an individual's first impression on others. I also hypothesized that the color of the profile pictures can influence

perceptions of the above-named traits and that a positive conversation tone would result in more favorable ratings compared to a neutral tone.

Results

From the total 348 responses I collected, I evaluated 340 of the responses and excluded 8 due to completely empty or unrelated content. Additionally, since several of the questions were not required, the number of answers for each response was not the same. This variance, however, differed by only a few responses, maintaining a similar sample size. Basic demographic information regarding survey participants is displayed in Table 1. Of the respondents, around 46.5% were male, 46.8% were female, 3.1% identified as non-binary, and 2.6% preferred not to say. Approximately 32.6% were high school seniors, 38.5% were juniors, 28.5% were sophomores, and 0% were freshmen (due to limitations, freshmen did not take the survey). This relatively even distribution provides an accurate representative sample from which common trends can be observed.

Table 1: Gender and Grade Level of Participants

	Number	Percentage (%)
Gender		
Male	158	46.5%
Female	159	46.8%
Non-binary	14	3.1%
Prefer Not To Say	9	2.6%
Total	340	
Grade Level		
Senior	111	32.6%
Junior	131	38.5%
Sophomore	97	28.5%
Freshman	0	0.0%

Total	339

Additionally, I collected data related to online habits, preferences and preexisting beliefs towards first impressions. I found that the most preferred forms of communication were in-person conversations (73.8% of respondents), online texts (22.4% of respondents), and virtual calls (2.1% of respondents). None of the respondents chose physical letters as their preferred method of communication. In terms of only the social media aspect of online environments, I found that a majority of the participants used social media: 93.2% used social media while 6.8% did not use social media. Of those who did use social media, 8.2% estimated that they used social media for less than an hour per day, 57.5% used it for 1-3 hours per day, and 34.5% used it for 3 or more hours per day. However, it should be noted that these data points were self reported.

In regards to beliefs surrounding first impressions, 87.9% of students who used social media reported that they are conscious about their own first impressions on others and 95.8% believed that first impressions are important when interacting with people. For students who did not use social media, these proportions were lower by around 10 percentage points at 73.9% and 86.9% for the two categories respectively.

In terms of profile pictures, responses to the different profile picture types were equally distributed throughout the questionnaire. The mean ratings for the different combinations of color and presence of a profile picture is in Table 2.

Table 2: Mean Rating of Profile Pictures Based on Color

Mean Rating	Extraversion	Agreeableness	Confidence	Competence
Yellow Combined	4.79	4.76	4.86	4.84
Yellow PFP	4.85	4.86	4.97	4.86

Yellow NoPFP	4.72	4.67	4.74	4.83
Green Combined	4.71	4.81	4.90	4.99
Green PFP	4.77	4.90	5.01	5.13
Green NoPFP	4.67	4.73	4.80	4.86

Note. "PFP" represents the presence of a profile picture while "NoPFP" represents the absence of one. "Combined" is the data for both "PFP" and "NoPFP" sets.

For yellow profile pictures, the presence of a picture had an overall average rating of 4.85, 4.86, 4.97, and 4.86 for extraversion, agreeableness, confidence, and competence respectively. For green profile pictures, these ratings were 4.77, 4.90, 5.01, and 5.13 respectively. Compared to ratings without a profile picture (yellow of 4.72, 4.67, 4.74, and 4.83 and green of 4.67, 4.73, 4.80, and 4.86 respectively), ratings about the subjects with profile pictures were around 2-5% greater. Figures 1 and 2 illustrate this difference in mean rating from participants. In both cases, there is a slight increase in participant rating in the presence of a profile picture compared to the lack thereof.

Figure 1: Mean Rating for Yellow Photos

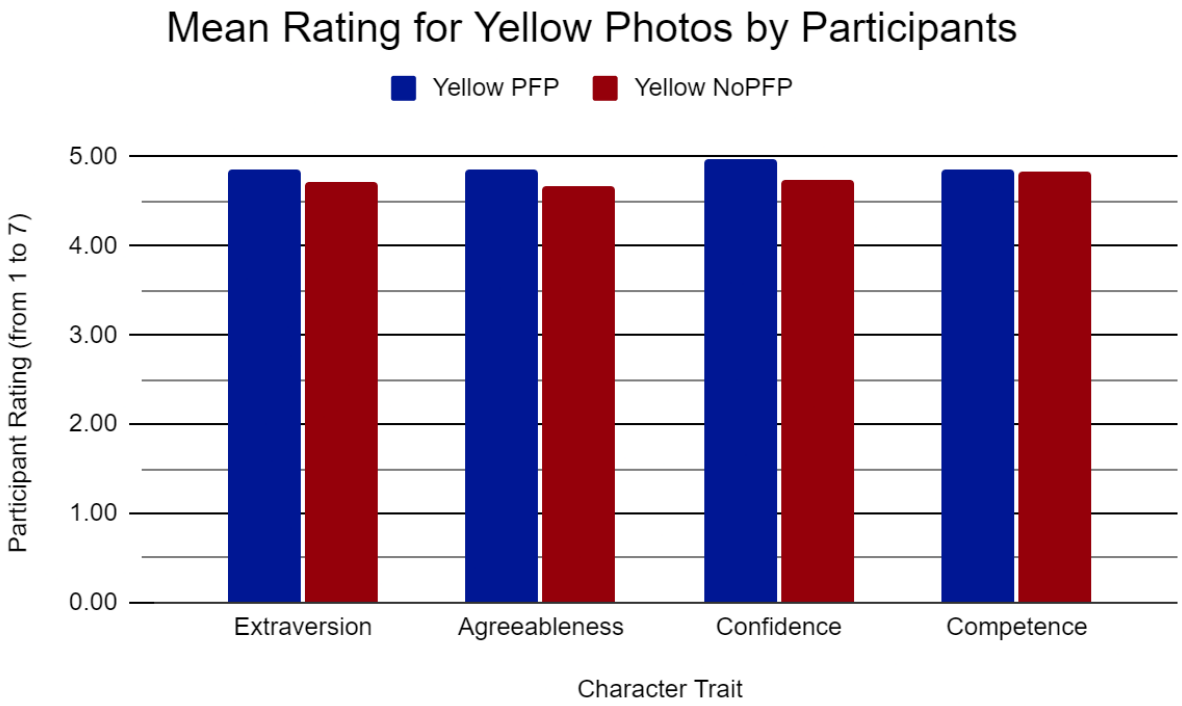
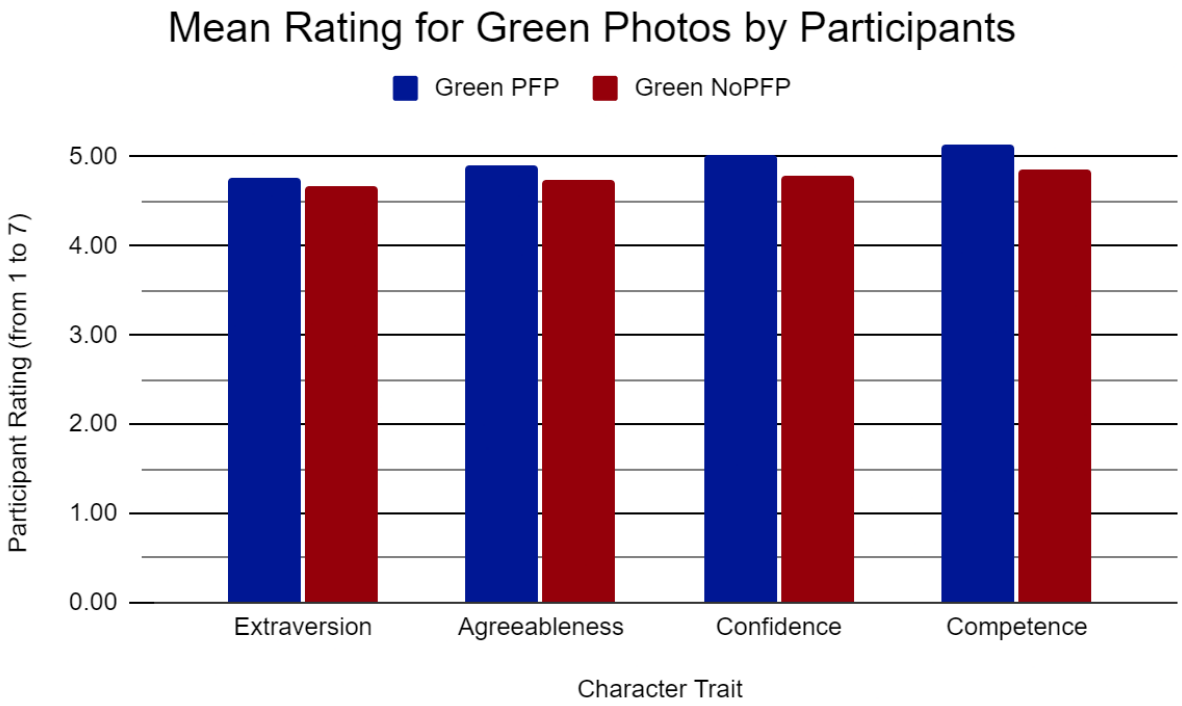


Figure 2: Mean Rating for Green Photos



In general, categories such as agreeableness and confidence tended to have the largest increase of rating between the presence and absence of a picture. Despite this general trend, a *t*-test shown below in Table 3 concluded no statistically significant difference between having a profile picture and not having a photo with a 95% confidence interval. However, at a slightly lower confidence level, these results would be significant.

Table 3: *t*-Test between Having a Profile Picture and Not Having A Profile Picture

Unpaired Two-Tailed *t*-Test	
Character Trait	Significance
Extraversion	0.400
Agreeableness	0.184
Confidence	0.119
Competence	0.272

Gender had little impact in this study. The difference between participant ratings based on the respondent's gender resulted in little variance, differing by only around 1-2% without a clear trend in either positive and negative directions. A *t*-test between male and female participants was conducted and returned no significant results. The results are displayed in Table 4. Only two groups were chosen due to lack of data in other groups.

Table 4: *t*-Test between Male and Female Participants.

Unpaired Two-Tailed *t*-Test	
Character Trait	Significance
Extraversion	0.970
Agreeableness	0.354
Confidence	0.453

Competence	0.941

Grade level also had a negligible impact on this study. An ANOVA test between sophomore, junior, and senior responses at a 95% confidence interval returned no significant results. The outcomes of the ANOVA are in Table 5 below.

Table 5: ANOVA Test Results Between Grade Levels

Quality	*SS*	*df*	*f*-ratio	*p*-value
Extraversion	1616.99	671.000	0.307	0.735
Agreeableness	1406.66	673.000	0.695	0.499
Confidence	1876.48	671.000	0.505	0.604
Competence	1315.35	673.000	0.107	0.899

The conversation tone of the stimulus materials had a statistically significant impact on participant ratings. Below, Table 6 contains the mean ratings for each quality for positive and neutral tone stimulus materials. The results of a two tailed *t*-test returned a p-value of 0.000 for each of the four qualities shown in Table 7.

Table 6: Mean Rating of Profile Pictures Based on Color

Mean Rating	Extraversion	Agreeableness	Confidence	Competence
Positive Tone	5.82	5.61	5.97	5.52
Neutral Tone	3.68	3.97	3.79	4.31

Table 7: *t*-Test between Positive and Neutral Conversation Tones

Unpaired Two-Tailed *t*-Test	
Character Trait	Significance
Extraversion	0.000

Agreeableness	0.000
Confidence	0.000
Competence	0.000

The difference in participant ratings between yellow and green was minimal. A two tailed *t*-test did not return a significant relationship between the two variables in any of the four qualities shown in Table 8 below.

Table 8: *t*-Test between Yellow and Green Profile Pictures

Unpaired Two-Tailed *t*-Test	
Character Trait	Significance
Extraversion	0.522
Agreeableness	0.673
Confidence	0.788
Competence	0.191

With a confidence interval of $p \leq 0.05$, none of these values reflect a statistically significant difference from changing the color of the profile picture.

Analysis

This study investigated the impacts of the presence or absence of a profile picture and the color of it on first impressions through a comparative analysis. An analysis of my research results disproves my hypothesis that photo color would influence first impressions. However, it provides valuable insight into how having a profile picture can contrast with not having one that can be expanded upon in the future. I initially hypothesized that having a profile picture would

lead to more positive first impressions compared to the absence of one. While a general trend supporting this did emerge, the relationship was not statistically significant at a 95% confidence interval. Regarding my initial research question, my research supports my hypothesis that a positive conversation tone results in more favorable ratings compared to a neutral tone in the sample materials. This outcome was expected, but the extent to which conversation tone had an impact on ratings was more substantial than I anticipated. Additionally, after assessing the data in regards to demographic information such as gender and grade level, I found a relatively even distribution of responses, meaning that demographics did not have a large impact on my experiment.

To begin, my research demonstrated that having a profile picture results in a slightly more positive impact on first impressions than not having one at all. This effect, however, is limited, as while there was a general positive trend, the relative difference in average participant ratings between having and not having a photo was only around 2-5%. Additionally, the correlation between having and not having a photo was not statistically significant with a 95% confidence level; however, at a slightly lower interval of 80%, the results would have been significant. These results provide a different perspective to Nadkarni et al. (2017)'s study regarding nature photos: in online spaces, the influence of nature illustrations are less than those in real life. Having a profile picture of nature does not produce as positive of effects as being shown nature photos in real life. However, a larger sample size would be beneficial in determining a more accurate relationship.

In terms of profile picture color, the results of my study indicate no significant difference between yellow and green photos. I determined this through conducting an unpaired two-tailed *t*-test. A *t*-test allows me to determine the probability of whether or not two sets of data came

from the same population: in this case, whether participants responded differently to having a yellow or green profile picture. An unpaired test is for unrelated groups, which is the case for my study, and a two-tailed test enables me to test deviations in both directions (greater or lesser ratings). With a confidence interval of 95%, the difference between the two colors is insignificant. My findings suggest that in online environments, color does not have as significant a role as it does in physical settings such as those found in Han et al. (2014).

As mentioned earlier, demographics had negligible contribution to the outcomes of my study. After conducting a *t*-test similar to that mentioned above, the differences in ratings by male and female participants are statistically insignificant. To determine the relationship between grade levels, an ANOVA was conducted to compare the three groups, which were high school sophomores, juniors, and seniors. This test also determined that grade level did not produce significant differences. These results regarding demographics are expected, though. Since the experiment was performed in an online environment (the questionnaire contained stimulus materials of online sample conversations found in the appendix), there were little opportunities for in-group biases or other influences to develop. Due to this, demographics had a negligible effect in determining a person's ratings, and thus, formation of first impressions.

The tone of the sample conversation materials had the most significant results in my study. Contrasting the outcomes for participant ratings for positive and neutral conversation tones, a stark difference is observed: participant ratings for positive tones were significantly greater than ratings for neutral tones. The discrepancy between the two is statistically significant for each of the four qualities, reflected by p-values of around 0.000 for each trait. To ensure that other analyses were not skewed by the conversation tone, half of all the stimulus materials contained positive conversation tones while the other half was neutral, and each participant rated

one of each; the raters were given the positive and neutral toned sample materials in random order while ensuring that half of the participants encountered a positive tone first while the other half experienced it second. The outcome is expected since Information about individuals in online spaces is limited, especially in forums or chat rooms. The main sources of information to form first impressions from are often the only forms of information available: profile pictures, conversation texts, and potentially bios. From the data, this result strongly suggests that conversation tone impacts first impressions, supporting my hypothesis.

In general, the results demonstrate that nature profile pictures are slightly beneficial to improve first impressions but not to the extent that other profile picture types are in different areas. In this study, profile pictures correlated with marginally improved participant ratings while other studies in my field have found more applicable results. For example, Baert (2017) discovered a large discrepancy in job interview invitations between various facebook profile pictures. Additionally, my study only moderately corroborates the observation in an adjacent field centered around social media platforms which found that profile pictures have a strong effect on impression formation (Wang et al., 2010). From my study, I found that what matters more in online forums and conversation platforms is the content and tone of a person's message and not the profile picture. This is also effectively a limitation of my study: I examined the extent of influence of profile pictures and photo color in online chat environments. It is possible that the setting affected the results of this study since online conversation platforms are built for the transmission of content through messages, not profile pictures. However, despite the variance of purpose of online chat platforms, it is still possible for profile pictures to influence first impressions. In this regard, the results of this study are relatively inconclusive, and future studies would benefit from a larger sample size.

A few other limitations exist as well. First, the scope of the experimental design was limited due to time constrictions to only two different types of nature profile pictures. Additionally, only yellow and green photos were examined. The combination of these hindered the breadth of which could be studied. It is possible that unexamined factors related to permutations of these original elements could have more meaningful results. Second, all participants were highschoolers and no freshmen responses were taken. While the remaining three grade levels (sophomores, juniors, and seniors) were evenly distributed, the lack of feedback from freshmen constrains the scope of my study as it does not provide an accurate representation of all high school students.

Additionally, in each of the four qualities that participants were asked to rate about (extraversion, agreeableness, confidence, and competence), their ratings were greater for the presented individuals with profile pictures than those without photos by a narrow margin. These low levels of variance, however, could be potentially attributed to a variety of factors. First, the short length of the survey, alongside the fact that participants were all high schoolers, could have served to intensify leniency and central tendency bias (*Common rater errors,* 2022). In turn, this would have resulted in the recorded mean ratings; central tendency bias suggests that participants would tend to rate "4" on a seven-point Likert scale, but when combined with leniency, this central rating could be shifted upward. Second, my primary form of data collection was through Likert scales, which are an inherently subjective measure. For example, a rating of "3" in extraversion is meaningless without a point of comparison. However, the results are in the form of a comparative discrepancy, avoiding this issue. Ultimately, these two aspects are not empirically proven but are worth noting for future endeavors.

Conclusion

Overall, I found that neither the presence of a profile picture nor the color of the photo have a significant effect on how someone is perceived by others and the formation of first impressions from it. Rather, in online conversation scenarios, what matters more is the content of the messages. For example, the tone of the message significantly influences the perception of someone, especially when compared to varying qualities of profile pictures. However, general trends in my research suggest that having a profile picture tends to result in slightly more positive first impressions than not having a photo. Viewers of profile pictures did not care about the color of the photo, meaning that frequent online users should look to have a profile picture but focus more on the content of their communications.

However, the limitations of my study are points which can be further expanded upon. This study only examined the influence of nature photos and two rather mild colors (yellow and green). Perhaps future research can investigate a broader range of picture types and test a more diverse range of colors. This would better determine the influence of profile pictures in general rather than a specific type. Another future direction is to extend the scope of the study to beyond high school students. While high school students are likely to have greater levels of digital literacy, they are not accurately representative of those who are in professional online environments. Engaging people from various backgrounds and ages would provide a more characteristic trend that can be applied to real-world environments. Before determining the best methods to optimize someone's first impressions, it is imperative that further research is conducted that can encompass more possibilities.

Appendix

Survey

Section 1 - Consent Form

You are invited to participate in a research study on the effect of auxiliary qualities on a person's perceived characteristics in online environments. This research project is being conducted by [Redacted], a senior at X High School, through the school's AP Capstone program. The survey will likely take no more than 5 minutes to complete.

PARTICIPATION

Respondents to this survey must be students currently enrolled at X High School for the 2022-2023 school year. Your participation in this study is completely voluntary. You may refuse to take part in the research or exit the study at any time without penalty. Additionally, during the survey, you are free to decline answering any questions that you do not wish to answer for any reason.

BENEFITS

You will not receive and direct benefits from participating in this study. However, your responses may help me learn about the relationship between online personalization and first impressions. No matter what you choose to do, I appreciate your time in considering and perhaps answering the survey. If you are interested in the results, my email address is provided below. Please contact this address if you would like to inquire about the results of this study.

RISKS

There are no significant risks involved from taking this survey, but feelings of discomfort may arise when answering questions about stimulus materials. Answering any questions in this survey is completely voluntary and you are free to skip any questions or leave the survey at any time.

CONFIDENTIALITY

Answers to this survey will be completely anonymous. Questions regarding general demographics will be asked. However, personally identifiable information will NOT be collected during this survey. Your responses will only be used for this study. Additionally, all collected information will be stored in a password protected google drive that can only be accessed by my advisor [Redacted] and I. This data will be deleted in July of 2023.

CONTACT

If you have any questions about any aspect of the study, please contact me ([Redacted]@gmail.com) or my advisor [Redacted].

ELECTRONIC CONSENT

If you would like to continue this survey and consent to participating, please click on "I Consent" below. Feel free to print a copy of this form for your convenience. By clicking on "I Consent" and continuing this survey, you indicate that:

- You have read the above information
- You voluntarily agree to participate

□ I Consent
□ I Do Not Consent

Section 2 - Demographics

1. What is your grade level?
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
    e. Other highschooler
    f. Not a highschooler ← send to submit form
2. What gender do you identify as?
    a. Male
    b. Female
    c. Non-Binary
    d. Prefer not to answer

Section 3 - Beliefs

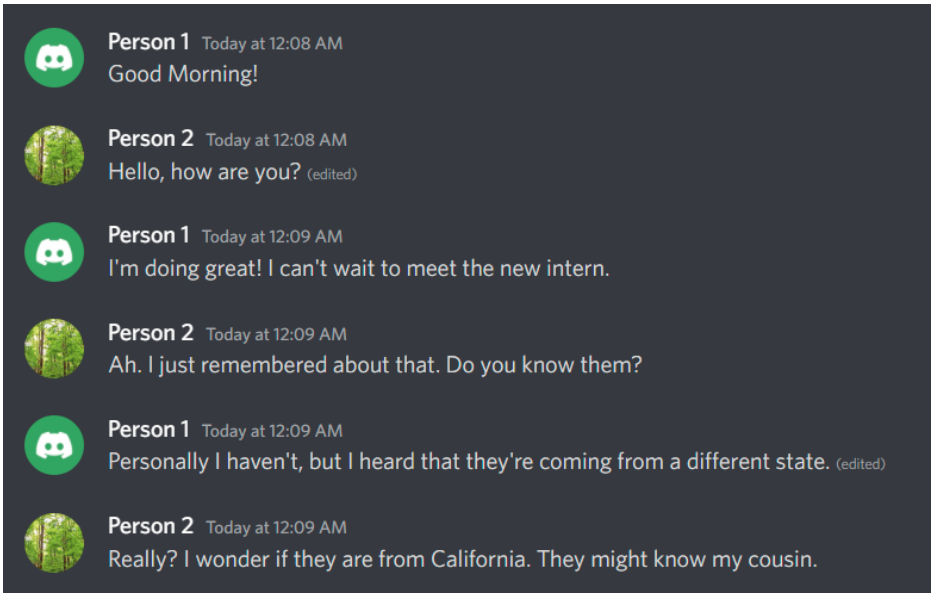
1. What is your preferred form of communication with others (friends, family, etc.)?
    a. In-Person Conversation
    b. Physical Letters
    c. Online Texts
    d. Other
    e. Prefer not to answer
2. First impressions are important when interacting with people
    a. Agree
    b. Slightly Agree
    c. Neutral/No Opinion

   d. Slightly Disagree
   e. Disagree
3. I am conscious about my own first impressions on others
   a. Agree
   b. Slightly Agree
   c. Neutral/No Opinion
   d. Slightly Disagree
   e. Disagree

Note: The following *Section 4* will be randomized in terms of which sample conversation will be given. This means that each respondent will only view and respond to one of the sample conversation pairs and not all four samples.

Section 4 - Sample Convo 1

For the following section, please rate Person 1 in each of the qualities for the given sample conversations from 1 to 7. For this scale, a 1 means low,7 means high, and 4 means average in the qualities. For example, a rating of 7 in Extraversion indicates a high level of sociability.



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

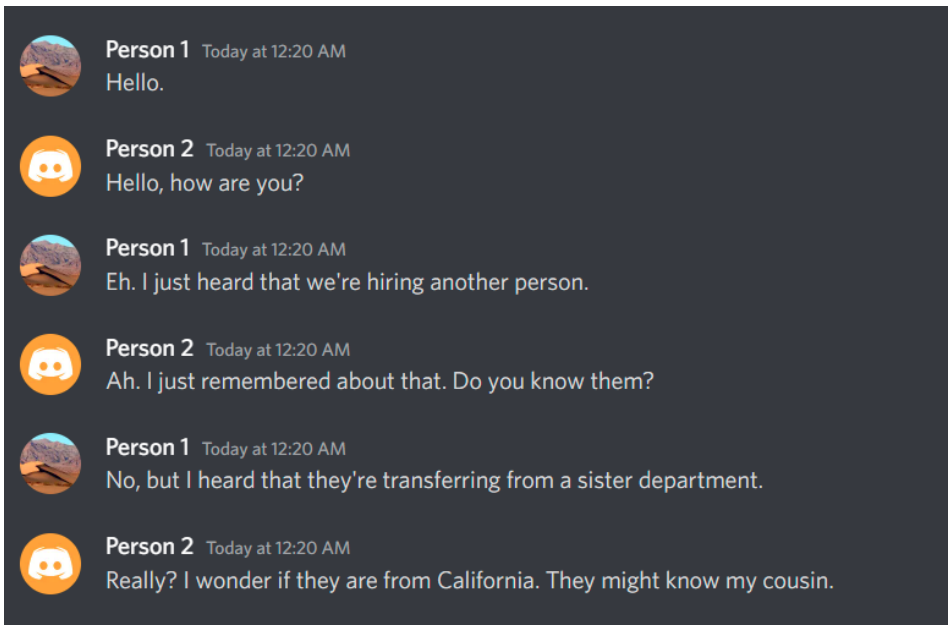
   1 2 3 4 5 6 7

3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

   1 2 3 4 5 6 7

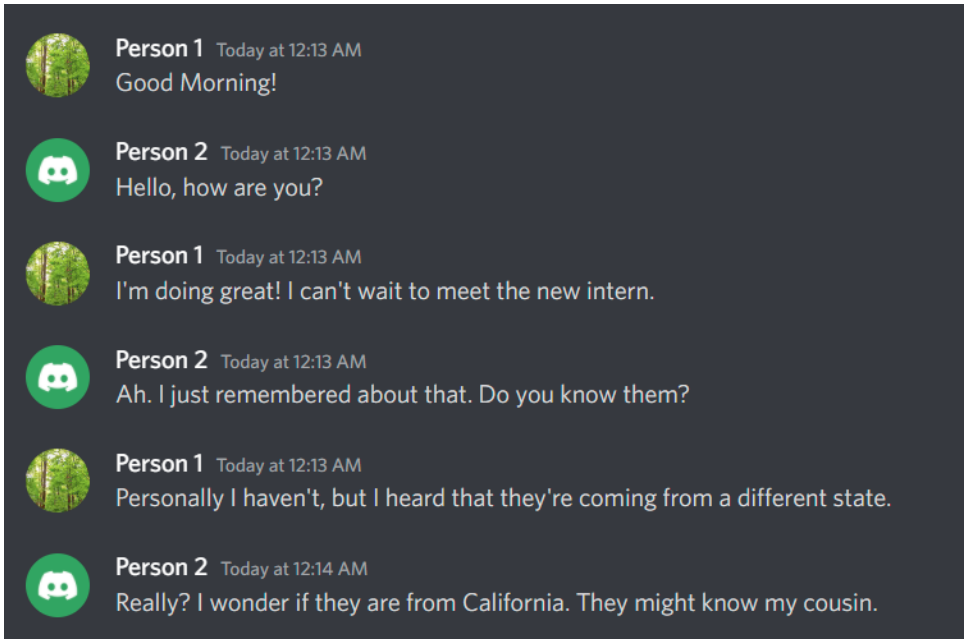
3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7

Section 4 - Sample Convo 2



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

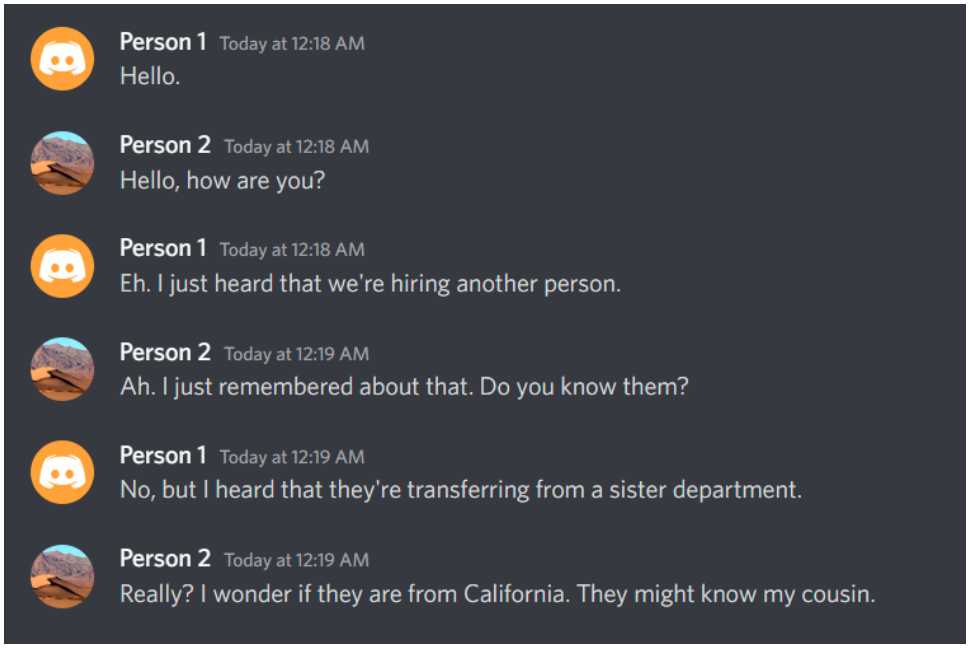
   1 2 3 4 5 6 7

3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

   1 2 3 4 5 6 7

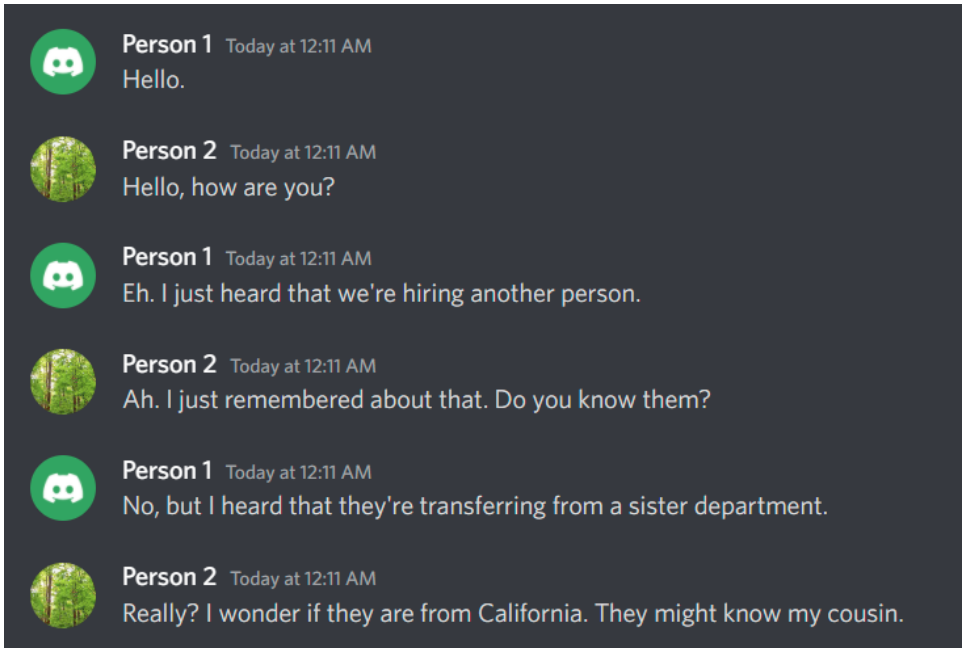
3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7

Section 4 - Sample Convo 3



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

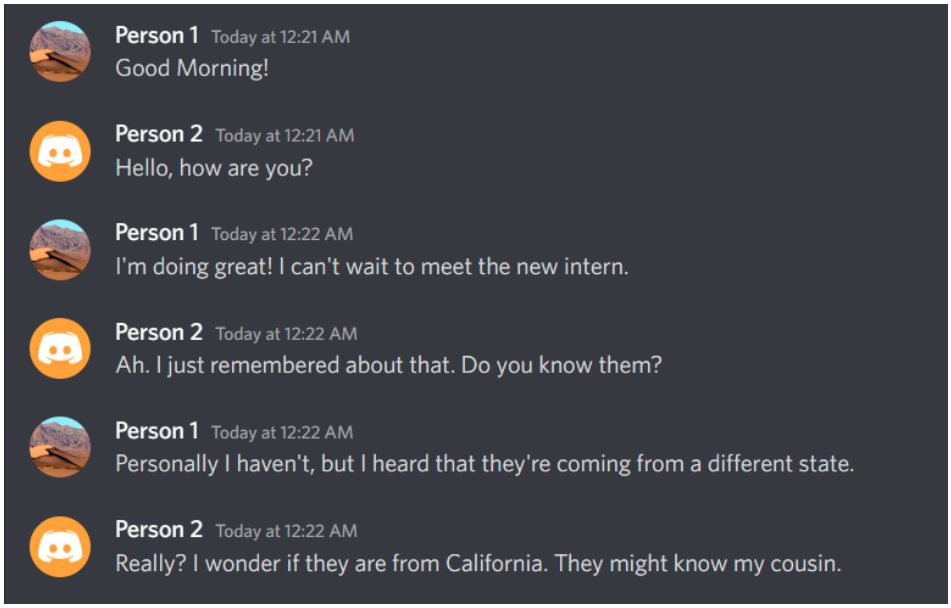
   1 2 3 4 5 6 7

3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

   1 2 3 4 5 6 7

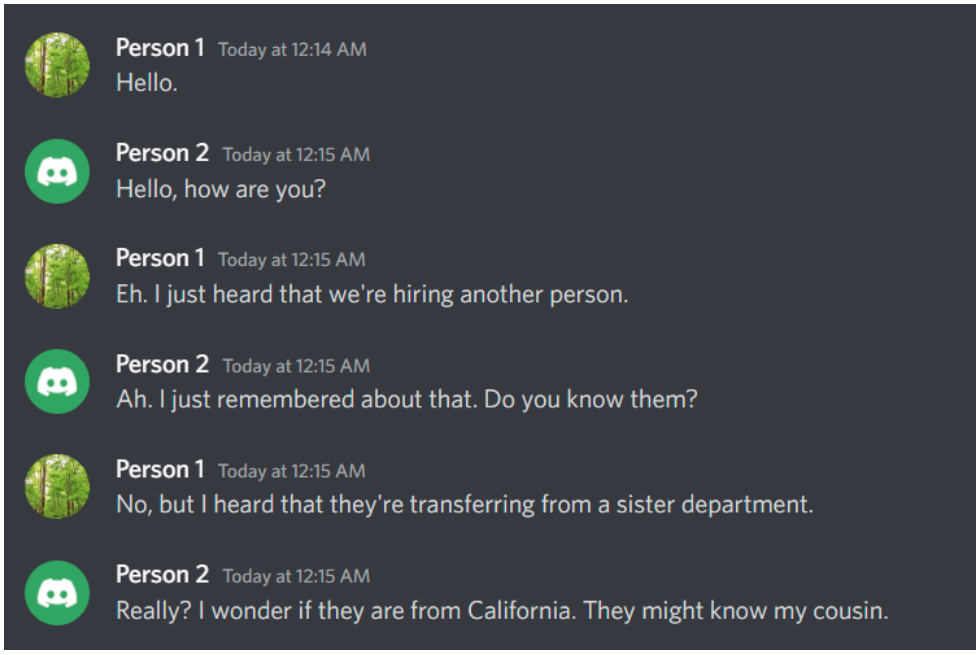
3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7

Section 4 - Sample Convo 4



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

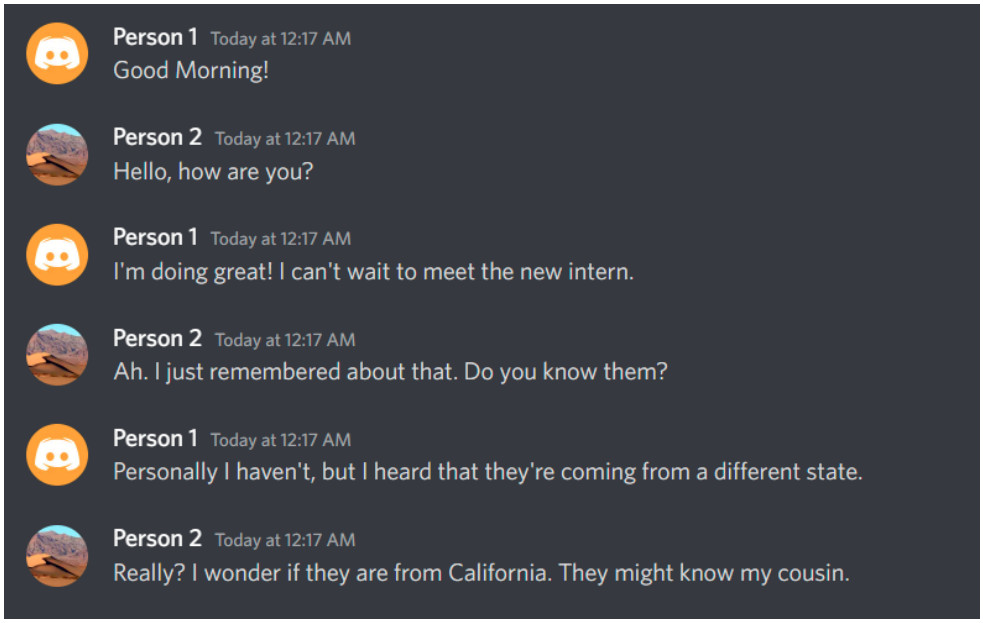
   1 2 3 4 5 6 7

3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7



*Based solely on the sample conversation above, please rate **Person 1** on the following from 1 to 7 with 1 being low and 7 being high for the qualities:*

1. Extraversion

   1 2 3 4 5 6 7

2. Agreeableness

   1 2 3 4 5 6 7

3. Confidence

   1 2 3 4 5 6 7

4. Competence

   1 2 3 4 5 6 7

References

Al Marouf, A., Hossain, R., Kabir Rasel Sarker, M., Pandey, B., & Tanvir Siddiquee, S. (2019). Recognizing language and emotional tone from music lyrics using IBM Watson tone analyzer. In *2019 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT)* (pp. 1-6). https://doi.org/10.1109/ICECCT.2019.8869008

Baert, S. (2017). Facebook profile picture appearance affects recruiters' first hiring decisions. *New Media & Society*, 20(3), 1220–1239. https://doi.org/10.1177/1461444816687294

Ballew, M. T., & Omoto, A. M. (2018). Absorption: How nature experiences promote awe and other positive emotions. *Ecopsychology*, *10*(1), 26–35. https://doi.org/10.1089/eco.2017.0044

Common rater errors. Dartmouth Human Resources. (2022). Retrieved March 31, 2023, from https://www.dartmouth.edu/hr/professional_development/for_managers/performance_management/common_rater_errors.php

Han, S., Choi, D., & Cha, Y. J. (2014). The effect of colour on the anchoring heuristic in consumer decision making. *Journal of European Psychology Students*, 5(3), 19–27. https://doi.org/10.5334/jeps.cf

Haxby, J. V., Hoffman, E. A., & Gobbini, M. I. (2000). The distributed human neural system for face perception. *Trends in Cognitive Sciences*, *4*(6), 223–233. https://doi.org/10.1016/s1364-6613(00)01482-0

Hehman, E., Sutherland, C. A. M., Flake, J. K., & Slepian, M. L. (2017). The unique contributions of perceiver and target characteristics in person perception. *Journal of personality and social psychology*, 113(4), 513–529. https://doi.org/10.1037/pspa0000090

IBM Watson Natural language understanding. IBM. (n.d.). Retrieved March 31, 2023, from https://www.ibm.com/cloud/watson-natural-language-understanding

Judge, T. A., & Simon, L. S. (2009). Does it pay to be smart, attractive, or confident (or all three)? Relationships among general mental ability, physical attractiveness, core self-evaluations, and income. *Journal of Applied Psychology*. https://pubmed.ncbi.nlm.nih.gov/19450010

Kachur, A., Osin, E., Davydov, D., Shutilov, K., & Novokshonov, A. (2020). Assessing the big five personality traits using real-life static facial images. *Scientific Reports*, *10*(1). https://doi.org/10.1038/s41598-020-65358-6

Liu, L., Preotiuc-Pietro, D., Riahi Samani, Z., E. Moghaddam, M., & Ungar, L. (2016). Analyzing personality through social media profile picture choice. In *International AAAI Conference on Web and Social Media*. https://www.aaai.org/ocs/index.php/ICWSM/ICWSM16/paper/view/13102/12741

Lounsbury, K. (2017). The first impression: Perceptions based on social media. *Brescia Psychology Undergraduate Honours Theses*. https://ir.lib.uwo.ca/brescia_psych_uht/4/

Nadkarni, N. M., Hasbach, P. H., Thys, T., Crockett, E. G., & Schnacker, L. (2017). Impacts of nature imagery on people in severely nature-deprived environments. *Frontiers in Ecology and the Environment*, 15(7), 395–403. https://doi.org/10.1002/fee.1518

Stolier, R. M., Hehman, E., Keller, M. D., Walker, M., & Freeman, J. B. (2018). The conceptual structure of Face Impressions. *Proceedings of the National Academy of Sciences*, *115*(37), 9210–9215. https://doi.org/10.1073/pnas.1807222115

Sutherland, C. A., Rowley, L. E., Amoaku, U. T., Daguzan, E., Kidd-Rossiter, K. A., Maceviciute, U., & Young, A. W. (2015). Personality judgments from everyday images of faces. *Frontiers in Psychology*, *6*. https://doi.org/10.3389/fpsyg.2015.01616

Tifferet, S., & Vilnai-Yavetz, I. (2018). Self-presentation in linkedin portraits: Common features, gender, and occupational differences. *Computers in Human Behavior*, 80, 33–48. https://doi.org/10.1016/j.chb.2017.10.013

Turner, M., & Hunt, N. (2014). What does your profile picture say about you? The accuracy of thin-slice personality judgments from social networking sites made at zero-acquaintance. *Social Computing and Social Media*, 506–516. https://doi.org/10.1007/978-3-319-07632-4_48

Vernon, R. J., Sutherland, C. A., Young, A. W., & Hartley, T. (2014). Modeling first impressions from highly variable facial images. Proceedings of the *National Academy of Sciences*, 111(32). https://doi.org/10.1073/pnas.1409860111

Gunaydin, G., Selcuk, E., & Zayas, V. (2016). Impressions based on a portrait predict, 1-month later, Impressions following a live interaction. *Social Psychological and Personality Science*, *8*(1), 36–44. https://doi.org/10.1177/1948550616662123