Differences in Social Perceptions between Digital Single Lens Reflex Camera and Cellphone Selfie Images

Cherian K. Kandathil MD[1], Priyesh N. Patel MD[1], Mikhail Saltychev MD PhD[2], Sam P. Most MD[1]

[1] Division of Facial Plastic and Reconstructive Surgery, Department of Otolaryngology-Head & Neck Surgery, Stanford University School of Medicine, Stanford, California

[2] Department of Physical and Rehabilitation Medicine, Turku University Hospital and University of Turku, Turku, Finland

Address for correspondence

Sam P. Most MD, Division of Facial Plastic and Reconstructive Surgery, Department of Otolaryngology-Head & Neck Surgery, Stanford University School of Medicine, 801 Welch Road, Stanford, CA 94305.

smost@stanford.edu

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Key Points

Question: Is there a difference in how people are perceived when their image is viewed in a selfie as opposed to a Digital Single Lens Reflex (DSLR) camera image?

Findings: The proportion of responses to questions for 'youngest' and 'most approachable' were highest for selfie at distance 24" with filter; questions for 'most attractive', 'most healthy', and 'most feminine' were highest for selfie at distance 12" with filter; for 'oldest', 'most confident', 'most intelligent', 'most successful' and 'least approachable', 'least attractive', 'least healthy', 'least feminine', and 'least successful' were highest for image taken with a DSLR camera.

Meaning: A generalizable preference for selfies with filters is seen when considering aesthetic features. DSLR images are associated with inherent characteristics of an individual.

Abstract

Background:

In light of the current selfie craze, driven primarily by social media platforms, there is an absolute need among Facial Plastic Surgeons to consider the role of these social platforms in patient counselling regarding their cosmetic requirements.

Learning Objectives:

Is there a difference in how people are perceived when their image is viewed in a selfie as opposed to a Digital Single Lens Reflex (DSLR) camera image?

Study Objective:

Utilizing a web-based survey to explore differences in third-party perceptions, if any, between portrait photograph using a DSLR camera and a selfie.

Design Type:

Survey study

Method:

Five types of portrait images of a female participant were taken for the survey:

1) Image taken with the DSLR camera (a Nikon® D7200 DSLR camera fitted with a Sigma® DG Macro (70mm 1:2.8) lens) at a distance of 3 feet from the subject;
2) Selfie taken with an iPhoneX® at 12 inches from the subject with a Snapchat® filter
3) Selfie at 12 inches without a Snapchat® filter
4) Selfie at 24 inches with a Snapchat® filter
5) Selfie at 24 inches without a Snapchat® filter.

Utilizing the Qualtrics survey platform (Qualtrics LLC), questions based on the five images, where the respondent choose an image each for the youngest, oldest, and "most" or "least" for approachability, attractiveness, confidence, health, feminine, intelligent and successful.

Results:

The survey was distributed to 223 respondents aged atleast 18 years.

$\chi 2$ Pearson square test found significant differences ($P<0.05$) in the distribution of the proportion of responses in 14 out of 16 questions in the survey. The proportion of responses to questions for 'youngest' and 'most approachable' were highest for selfie at distance 24" with filter; questions for 'most attractive', 'most healthy', and 'most feminine' were highest for selfie at distance 12" with filter; for 'oldest', 'most confident', 'most intelligent', 'most successful' and 'least approachable', 'least attractive', 'least healthy', 'least feminine', and 'least successful' were highest for image taken with a DSLR camera. The only insignificant differences were seen in responses to questions for 'least confident' ($P=0.5$) and 'least intelligent' ($P= 0.55$).

Conclusion:

Selfie images with filters are exclusively associated with aesthetic qualities while DSLR images are associated with inherent characteristics of an individual.

Introduction

"Selfie," according to the Oxford English Dictionaries, is defined as, "a photograph that one has taken of oneself, esp. one taken with a smartphone or webcam and shared via social media."[1] The origin of self-portraits dates as far back as 1839, when the first known self-portrait photograph was taken in Philadelphia by a photography enthusiast by the name Robert Cornelius, an American pioneer of photography.[2] Other documented early-adopters of self-portraits in history include a Russian Emperor's teenage daughter, a famous photographer named Joseph Byron, and celebrities like Frank Sinatra and George Harrison.[2] Although self-portraits have been in existence for a while, the advent of "social media" has made self-portraits - now popularly referred to as "Selfies" - a global phenomenon. The first documented use of the word "selfie" for a self-portrait was in 2002 on an Australian online forum.[2] In light of the ubiquitous influence of this phenomenon and its prominent usage worldwide, Oxford English Dictionaries included it in an online version in 2013 and also named "selfie" as the 2013 word of the year.[2] In 2014, "selfie" was added to the Merriam-Webster's dictionary.

The ability to produce "selfies" on handheld devices has allowed for more frequent scrutiny of one's self-image and a platform through which patients can identify the discrepancies between their perceived and ideal self-image. The primary goal of patients seeking facial cosmetic surgery is the alignment of his or her perceived self-image with an ideal self-image. According to the 2017 annual survey by the American Academy of Facial Plastic and Reconstructive Surgery, fifty five percent of its members reported having seen patients who wanted to look better in selfies, a substantial increase from previous years.[3] These figures can be primarily attributed to easily accessible photo editing smartphone applications like Facetune™ and social media platforms with photo sharing abilities like Snapchat™ and Instagram™ with

inbuilt ‘beauty’ filters. Social media statistics show that 74 % images posted on Snapchat™ are selfies with 1000 selfies posted every 10 seconds on Instagram™; globally, ninety three million selfies are posted online per day.[4] The popularity of these applications can account for the increase in the number of patients approaching plastic surgeons wanting to look like their altered version. [3, 5, 6] “Snapchat dysmorphia” is the term coined to describe this phenomenon.[5, 6] Moreover, an individual’s level of involvement in social media is associated with negative self-esteem issues thereby affecting their psycho-social health and also increasing the odds of seeking cosmetic surgery.[7, 8]

Portrait photography or portraiture gained prominence with the invention of the “Daguerreotype” format of photography in 1839 by Louis Jacques Mande Daguerre in France.[9] Digital Single Lens Reflex (DSLR) cameras since its introduction in the early 2000s remain the most popular camera of choice for portrait photographs among both amateur and professional photographers, replacing the Single Lens Reflex (SLR) cameras. It is also the most common type of camera utilized in the majority of plastic surgery offices for patient photography and preoperative planning. As such, it is possible that a discrepancy exists between photography employed for surgical planning and photography most commonly used by patients to identify their personal aesthetic goals.

In addition, the growth of social media has paralleled the increased access to mobile photography tools. Prior studies have shown that apart from the desire to look more attractive, there are underlying societal, emotional, and psychological goals that motivate a person to seek cosmetic surgery.[10, 11] As a result, it is not surprising that facial plastic surgeons are increasingly encountering patients who seek aesthetic changes based on their selfies. In light of the current ‘selfie epidemic’, there is an absolute need among Facial Plastic Surgeons to consider the role of

these social platforms in patient counselling regarding their cosmetic requests.[12] The objective of this study was to utilize a web-based survey to explore differences in third-party perceptions, if any, between two image types (portrait photograph taken with a DSLR camera and a self - portrait or a selfie). Our prior work has demonstrated the effect of focal length on facial appearance.[13] Furthermore, prior studies have successfully utilized a web-based survey format to quantify social perception outcomes in Facial Plastic Surgery.[14, 15] Since it has been demonstrated that the distance at which a selfie is taken, directly influences the individual's nasal dimensions[16] and the increased trend in cosmetic patients' to look like their filtered selfie version[3], we included selfies' taken with and without filters at a distance of 12" and 24"for this study.

Methods

Study Design: Survey Study

Survey Details

After approval from the Stanford University institutional review board the survey was undertaken in August 2019. Portrait images from a consented white Caucasian female volunteer were utilized for this study. Images were taken with a Nikon® D7200 DSLR camera fitted with a Sigma® DG Macro (70mm 1:2.8) lens and an iPhone® X with and without a Snapchat® "pretty" filter. Five types of portrait images were taken for the survey (Figure 1): a) 'Image 1'was taken with the DSLR camera at a distance of 3 feet from the subject; b) 'Image 2' (selfie)

taken with an iPhoneX® at 12 inches using a selfie stick with a Snapchat® filter c) 'Image 3' (selfie) taken with an iPhoneX® at 12 inches using a selfie stick without a Snapchat® filter d) 'Image 4' (selfie) taken with an iPhoneX® at 24 inches using a selfie stick with a Snapchat® filter e) 'Image 5' (selfie) taken with an iPhoneX® at 24 inches using a selfie stick without using a Snapchat® filter.

Utilizing the Qualtrics survey platform (Qualtrics LLC), sixteen questions based on the five images, where the respondent choose an image each for the youngest, oldest, and "most" or "least" for approachability, attractiveness, confidence, health, feminine, intelligent and successful. Qualtrics LLC distributed the survey to a general population of 223 participants sourced through the Qualtrics respondent distribution system. All participants were at least 18 years of age and oblivious to the purpose of the study. All respondents were reimbursed for their participation in the survey. Respondent particulars of age, gender, ethnicity, level of education, and previous history of plastic surgery by self or in a family member or friend were collected.

Statistical Analysis

Descriptive statistics were reported for respondent's socio-demographic data as means and standard deviations (SDs) or as absolute numbers and percentage. $\chi 2$ Pearson square test was carried out to assess the differences in the distribution of proportion of responses between the five image types across all sixteen survey questions (categorical data). In order to assess statistically significant differences across proportions and to determine if a significant preference in image type for each survey question exists, the 95% confidence interval (CI) for the population proportion of total responses for each variable by each image type were represented graphically. The 95% CI were calculated as $\hat{p}$ +/- 1.96 x $\sqrt{(\hat{p}\ (1-\hat{p})\ /\ n)}$, in which $\hat{p}$ represented

the sample proportion and 95% CI represented a 95% confidence interval. For any respondent characteristic with more than two groups, a Bonferroni post hoc test was used to assess differences between groups. A two-tailed p-value ≤ 0.05 was considered significant. All the analyses were carried out using Stata/IC Statistical Software: Release 15. College Station (StataCorp LP, TX, USA).

Results

The survey was distributed to 223 respondents (100% survey completion rate by Qualtrics, LLC). Table 1 describes the socio-demographic characteristics of the survey respondents. Seventy-one percent of the respondents were women (n=159). The mean age of the respondents was 42 (16) years (range: 18 to 77 years). Of the respondents, 68% were white (n=151) and 27% had a high school diploma or a GED (n=61). Only 28% of the respondents (n=63) had a personal or family history of plastic surgery.

$\chi 2$ Pearson square test found significant differences ($P<0.05$) in the distribution of the proportion of responses between the five image types in 14 out of 16 questions in the survey (Table 2). The proportion of responses to questions for 'youngest' and 'most approachable' were highest for image 4 (selfie at distance 24" with filter). The proportion of responses to questions for 'most attractive', 'most healthy', and 'most feminine' were highest for image 2 (selfie at distance 12" with filter). The proportion of responses to questions for 'most confident', 'most intelligent', 'most successful', 'oldest', 'least approachable', 'least attractive', 'least healthy', 'least feminine', and 'least successful' were highest for image 1 (image taken with DSLR

camera). The only insignificant differences were seen in responses to questions for 'least confident' (P=0.5) and 'least intelligent' (P= 0.55).

Figure 2 (A-P) depicts the population proportion of responses for each image type with the 95% CI for each categorical variable. Based on overlapping 95% CI's, the following associations were observed (image order based on proportion of responses): A) 'Youngest' - image 4 (selfie at 24" with filter) and image 2 (selfie at 12" with filter). B) 'Oldest'- image 1 (DSLR) and image 5 (selfie at 24" without filter). C) 'Most Approachable'- image 4 (selfie at 24" with filter), image 2 (selfie at 12" with filter), and image 1 (DSLR). D) 'Least Approachable' - image 1 (DSLR), image 5 (selfie at 24" without filter), and image 3 (selfie at 12" without filter). E) 'Most Attractive'- image 2 (selfie at 12" with filter) and image 4 (selfie at 24" with filter). F) 'Least Attractive'- image 1 (DSLR), image 5 (selfie at 24" without filter). G) 'Most Confident'- image 1 (DSLR), image 4 (selfie at 24" with filter), and image 2 (selfie at 12" with filter). H) 'Least Confident'- No significant difference between image types. I) 'Most Healthy'- image 2 (selfie at 12" with filter). J) 'Least Healthy'- image 1 (DSLR), image 3 (selfie at 12" without filter), and image 5 (selfie at 24" without filter). K) 'Most Feminine'- image 2 (selfie at 12" with filter). L) 'Least Feminine'- image 1 (DSLR), image 5 (selfie at 24" without filter), and image 3 (selfie at 12" without filter) M) 'Most Intelligent'- image 1 (DSLR), N) 'Least Intelligent' - No significant difference between image types. O) 'Most Successful'- image 1 (DSLR), image 2 (selfie at 12" with filter), and image 4 (selfie at 24" with filter). P) 'Least Successful'- image 1 (DSLR), image 5 (selfie at 24" without filter).

There were no important differences between the distributions of the responses based on individual age groups or gender (Bonferroni adjustment) even when significant $\chi 2$ Pearson square test *p*-values were observed.

DISCUSSION

Alignment of a patient's expectations with a facial plastic surgeon's impressions and surgical intentions requires careful preoperative counseling. Photography, particularly the use of DSLR photography, has become an essential part of this process as a tool that allows for preoperative planning. Differences in the type of photography commonly used by patients (selfies) compared to surgeons (DSLR) may result in discordant expectations. With the increase in patients employing selfies to identify facial deformities and subsequent aesthetic goals, it has become imperative for surgeons to understand 1) how these images are perceived by patients and 2) how these images may relate to standard photography. In this survey-based study, we have attempted to delineate these differences with an emphasis on social perception.

The crowdsourced results in this study allow for several generalizations regarding impressions of images obtained with a DSLR versus selfies without filters. An interesting dichotomy in the results is observed: for the majority of characteristics considered to have aesthetic value (age, attractiveness, and femininity) the DSLR images were considered equivalent to selfie images without filters. For the positive attributes of characteristics that may represent more inherent traits like approachability, confidence, health, intelligence, and success, the DSLR images were perceived more positively than selfie images without filter. This dichotomy is somewhat unusual as prior studies have demonstrated that a more aesthetically pleasing face is judged more positively on a host of dimensions.[17] Nonetheless, when considering improvements in external features and facial aesthetics for the goal of appearing younger and more attractive – a primary goal of most patients seeking care by a facial plastic surgeon – DSLR and unfiltered selfie images are perceived similarly. As such, DSLR images appear to be a suitable tool for preoperative counseling.

Unlike unfiltered selfie images, the filtered selfie images were perceived to be superior to DSLR images for characteristics, notably those that carry aesthetic value (age, attractiveness, and femininity). These findings are consistent with the intended effect of filters in which images have smoother skin texture, decreased color irregularities, wider eyes, and more contoured cheekbones. Interestingly, however, while filters improve perception of inherent positive traits including approachability, confidence, health, and success when compared to non-filtered selfie images. However, these filtered selfie images were perceived to be equivalent to DSLR images in regard to the positive attributes of these earlier mentioned traits with a notable exception for the trait of intelligence, where DSLR image was perceived more positively than both filtered and unfiltered selfie images. Although a variety of tools for modification of DSLR photography are used by surgeons to allow for a depiction of expected surgical results (e.g. Adobe Photoshop™), it is unclear how these modified images may relate to filtered selfie images. Therefore, if patients seek aesthetic results based on filtered selfie images, it is imperative to set realistic expectations using DSLR images. Filtered selfies may result in an unrealistic expectation of what is acceptable in a patient's pursuit of looking flawless. If these profoundly altered images of self are used as a benchmark for an acceptable appearance, postoperative dissatisfaction is highly likely. Specifically, some characteristics (such as skin smoothness and eye size) are immutable and set expectations at unrealistic levels for patients. If patients show selfie images that they like or do not like during consultation, it is important to determine if filters were used.

The consistency in outcomes within the aesthetic features of age, attractiveness, and femininity suggests that DSLR and unfiltered selfie images are generally considered equivalent but inferior to filtered images when assessing these traits.

A prior study has demonstrated that taking photographs at shorter (selfie) distances (12") results in facial distortion, particularly changes in the width of the nose.[16] This distortion is not observed at a distance of 5 feet (portrait length). As such, perceived differences in DSLR images and selfies may be attributable in part to differences in the distances these images are taken. Other fundamental differences in mobile photography tools and DSLR cameras may also contribute. For example, although mobile phones now allow for variation in aperture and focal lengths with multiple camera lenses, they have smaller sensors than DSLR cameras and image noise is generally more apparent.

Several limitations of this study should be noted. This is a survey study by design which is prone to selection bias and response bias. We utilized only an image of a Caucasian female which may affect the generalizability of our results. The study did not account for covariance between the measured domains. It is possible that perceived age and attractiveness might influence other social perceptions, such as health, intelligence, or approachability. Thus, it is possible that a single domain, such as appearing youngest, might have a dominant effect on perceptions observed in this study. While the present analysis assumed the independence of each measured domain, they probably were correlated. That might distort the observed effects. Additionally, the analysis did not count for a potential priming effect (a situation when exposure to one stimulus influences a response to a subsequent stimulus) and the random variance of observed bias.

CONCLUSION

When considering improvements in external features and facial aesthetics for the goal of appearing younger and more attractive (a primary goal of most patients seeking care by a facial

plastic surgeon) DSLR and unfiltered selfie images are perceived similarly. As such, DSLR images appear to be a suitable tool for preoperative counseling. A generalizable preference for selfies with filters over unfiltered selfie and DSLR images is seen when considering aesthetic features including age, attractiveness, and femininity. Therefore, if patients seek aesthetic results based on filtered selfie images, it is imperative to set realistic expectations when using DSLR images, including modified versions.

References

1. Dictionary OE. "selfie, n.". (Oxford University Press).
2. Rahman-Jones I. Dear Paris Hilton, Here's a Brief History of the Selfie. (British Broadcasting Company (BBC)-Newsbeat, www.bbc.co.uk/newsbeat). November 2017.
3. Rajanala S, Maymone MBC, Vashi NA. Selfies-Living in the Era of Filtered Photographs. JAMA Facial Plast Surg 2018;20:443-444.
4. Hatch C. Why Social Media Statistics Matter. (disruptiveadvertising.com). 2018.
5. Brucculieri. J. “Snapchat dysmorphia” points to a troubling new trend in plastic surgery. (HuffPost). February 22, 2018.
6. Hosie R. More People Want Surgery to Look Like a Filtered Version of Themselves Rather Than A Clebrity, Cosmetic Doctor Says. (Independent). 2018.
7. Chen J, Ishii M, Bater KL et al. Association Between the Use of Social Media and Photograph Editing Applications, Self-esteem, and Cosmetic Surgery Acceptance. JAMA Facial Plastic Surgery 2019;21:361-367.
8. McLean SA, Paxton SJ, Wertheim EH et al. Photoshopping the selfie: Self photo editing and photo investment are associated with body dissatisfaction in adolescent girls. Int J Eat Disord 2015;48:1132-1140.
9. Clark G. 19th Century Photography Formats.
10. Sobanko JF, Taglienti AJ, Wilson AJ et al. Motivations for seeking minimally invasive cosmetic procedures in an academic outpatient setting. Aesthet Surg J 2015;35:1014-1020.
11. Maisel A, Waldman A, Furlan K et al. Self-reported Patient Motivations for Seeking Cosmetic Procedures. JAMA Dermatol 2018;154:1167-1174.
12. Reilly MJ, Parsa KM, Biel M. Is There a Selfie Epidemic? JAMA Facial Plast Surg 2019.
13. Swamy RS, Sykes JM, Most SP. Principles of photography in rhinoplasty for the digital photographer. Clin Plast Surg 2010;37:213-221.
14. Kandathil CK, Saltychev M, Moubayed SP et al. Association of Dorsal Reduction and Tip Rotation With Social Perception. JAMA Facial Plast Surg 2018;20:362-366.
15. Nuyen B, Kandathil CK, Saltychev M et al. Social Perception of the Nasal Dorsal Contour in Male Rhinoplasty. JAMA Facial Plast Surg 2019.

16. Ward B, Ward M, Fried O et al. Nasal Distortion in Short-Distance Photographs: The Selfie Effect. JAMA Facial Plast Surg 2018;20:333-335.
17. Zebrowitz LA, Montepare JM. Social Psychological Face Perception: Why Appearance Matters. Soc Personal Psychol Compass 2008;2:1497.

Figure Legend

Figure 1. Image Types (1-5)
Image Type: 1) DSLR; 2) Selfie -12" with Filter; 3) Selfie -12" with No-Filter; 4) Selfie -24" with Filter; 5) Selfie -24" with No-Filter.

Figure 2. 95% confidence interval (CI) for the population proportion of total responses for each variable by each image type is represented graphically.

X axis indicates Image Types: 1) DSLR; 2) Selfie -12" with Filter; 3) Selfie -12" with No-Filter; 4) Selfie -24" with Filter; 5) Selfie -24"with No-Filter.

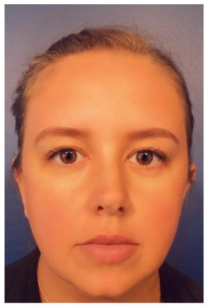
Y axis indicates Population proportions (%) with error bars representing 95% confidence intervals

Graphs/questions: A – "youngest"; B – "oldest"; C – "most approachable"; D – "least approachable"; E – "most attractive"; F – "least attractive"; G – "most healthy"; H – "least healthy"; I – "most masculine"; J – "most feminine"; K – "most intelligent"; L – "least intelligent"; M – "most successful"; N – "least successful"; O – "most leader-like"; P – "least leader-like"

Table :1 Demographic Characteristics of Survey Respondents	
N (Total)	223
Age Mean (SD), years	41.7 (16.1)
Age (Range), years	18 - 77
Variable	**Frequency, No. (%)**
Age groups, years	
<33	72(32)
33-46	71 (32)
47-61	50 (22)
>61	30 (13)
Gender	
Men	64 (29)
Women	159 (71)
Racial/ethnic groups	
White	151 (68)
Black	39 (17)
Hispanic/Latino	17 (8)
Asian	10 (4)
Pacific Islander	1 (0)
Other	5 (2)
Education	
No schooling completed	3 (1)
Some high school, no diploma	9 (4)
High school graduate, diploma or the equivalent (for example: GED)	61 (27)
Some college credit, no degree	40 (18)
Associate degree	19 (9)
Bachelor's degree	44 (20)
Doctorate degree	4 (2)
Master's degree	29 (13)
Professional degree	2 (1)
Trade/ technical/ vocational training	12 (5)
Personal history of plastic surgery or in family or friends	
Yes	63 (28)
No	160 (72)
Total	223 (100)

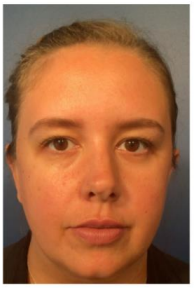
	TABLE 2: Distribution of Responses							
		Images, % of responses						p-value
		1-DSLR image	2-Selfie at 12'' With Filter	3-Selfie at 12'' Without Filter	4-Selfie at 24'' With Filter	5-Selfie at 24'' Without Filter	Total	
1	YOUNGEST	8	42	1	**45**	3	100	**<0.0001**
2	OLDEST	**47**	3	16	0	35	100	**<0.0001**
3	MOST approachable	25	26	11	**27**	10	100	**0.0045**
4	LEAST approachable	**28**	12	22	11	26	100	**0.0131**
5	MOST attractive	16	**39**	7	31	7	100	**<0.0001**
6	LEAST attractive	**35**	9	17	9	30	100	**<0.0001**
7	MOST confident	**31**	23	11	25	9	100	**0.0011**
8	LEAST confident	25	19	19	14	23	100	0.4917
9	MOST healthy	25	**37**	6	24	8	100	**<0.0001**
10	LEAST healthy	**35**	9	23	10	23	100	**0.0002**
11	MOST feminine	15	**45**	8	27	5	100	**<0.0001**
12	LEAST feminine	**37**	7	22	6	28	100	**<0.0001**
13	MOST Intelligent	**35**	19	17	18	10	100	**0.0015**
14	LEAST intelligent	22	23	18	14	23	100	0.5565
15	MOST successful	**32**	26	9	22	10	100	**0.0006**
16	LEAST successful	**30**	13	16	14	26	100	**0.0132**

Figure 1 : Image Types (1-5)

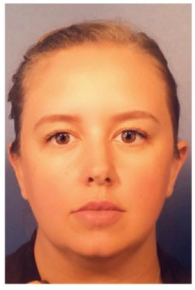


2
Selfie
12"
With filter

1
dSLR
3 ft
Dual flash

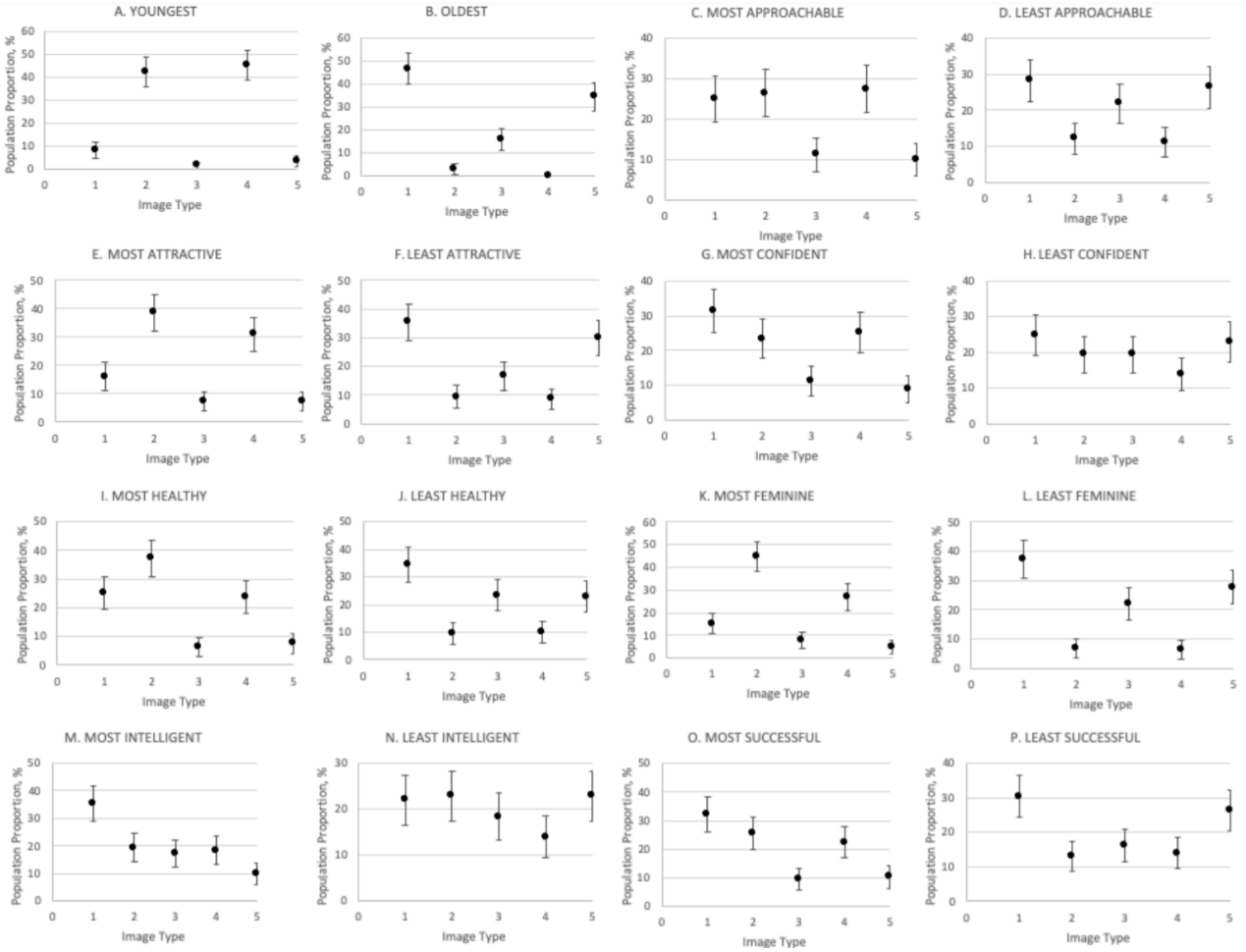


3
Selfie
12"
No filter



4
Selfie
24"
With filter

5
Selfie
24"
No filter


A. YOUNGEST
B. OLDEST
C. MOST APPROACHABLE
D. LEAST APPROACHABLE
E. MOST ATTRACTIVE
F. LEAST ATTRACTIVE
G. MOST CONFIDENT
H. LEAST CONFIDENT
I. MOST HEALTHY
J. LEAST HEALTHY
K. MOST FEMININE
L. LEAST FEMININE
M. MOST INTELLIGENT
N. LEAST INTELLIGENT
O. MOST SUCCESSFUL
P. LEAST SUCCESSFUL
Population Proportion, %
Image Type