Instagram advertisements favour the left cheek

Abstract

The growth of social media has catalysed a shift in marketing expenditure away from traditional print media. As Instagram posts featuring left cheek poses gain more "likes" than right cheek poses, advertisers and social media influencers would likely benefit from favouring the left cheek. Whilst previous investigations of posing biases in print advertising present a conflicting picture, research has yet to investigate posing biases in Instagram advertisements. Given that left cheek images garner more "likes" than right cheek images, we hypothesized a left cheek bias for Instagram advertisements. Two thousand posts (F=M) were sourced by searching Instagram's 'Most Recent' feed using the #ad, and coded for pose orientation, image type, and model gender. As predicted, Instagram advertisements showed a left cheek bias (59.8%) that was evident across genders and image types, being stronger for female than male models, and for full body than head and torso poses. As such, these data indicate that the left cheek bias that characterises painted and photographic portraits extends to paid Instagram promotions. The difference in bias from previous investigations of posing orientation in print media advertisements may reflect the importance of emotion in driving attentional capture in social media's highly competitive and content-overloaded landscape.

The popularity and ubiquity of social media have catalysed a shift in advertising expenditure. With newspaper and magazine advertising spend anticipated to decrease by 6% in 2019, forecasts indicate 20% growth in social media advertising over the same period, increasing to a predicted US $84 billion in 2019[1]. Instagram is one of the most popular social media platforms for advertising, reaching over one billion users worldwide[2]. Because Instagram posts feature both image and text, the platform is attractive to advertisers as it allows the simultaneous presentation of both a photo of the product/brand and a descriptive caption[3]. Marketers now forge lucrative alliances with Instagram influencers (i.e., influential users with a large following that are regarded as trusted tastemakers in their niche(s)[3]) to promote brands, products and services in paid Instagram advertisements; in 2017 86% of marketers reported using influencers as part of their campaigns[4]. The cost of paid posts varies with the influencers' followings (more followers = higher payment) and engagement rates (more "likes" and comments = higher payment), with the highest-paid influencers reported to earn US $1,266,000 per post[5].

Recent research by Lindell[6] has established that Instagram posts featuring left cheek poses gain a more positive response from followers, garnering more "likes" than right cheek poses

(though note that to date this is the only paper examining the effect of posing biases on Instagram engagement thus further research is needed to confirm and extend this finding). "Likes" are currency in social media's attention economy because they directly index popularity. As left cheek images prompt stronger engagement than right cheek images, it would behove advertisers and social media influencers to favour left cheek poses in paid advertisement posts. Research to date has not investigated posing biases in Instagram advertisements, however previous investigations of print advertising present a rather mixed picture. When Burkitt, Saucier, Thomas and Ehresman[7] investigated posing biases in 2221

magazine advertisements (surveying ads from 15 magazines published between 2000 and 2004) they found a right cheek bias. This finding was replicated in a second experiment assessing posing biases in 443 older magazine advertisements (four magazines published between 1884 and 1955), suggesting a consistent right cheek bias in magazine advertisements over the past 100+ years. However other results failed to replicate these findings. Indeed, Thomas, Burkitt, Patrick and Elias's[8] investigation of posing biases in 2801 magazine advertisements (seven magazines published from 2005 to 2006) instead indicated a left cheek bias for ads featuring female models, and no cheek bias for ads showing male models. Thus the existing research on posing biases in print advertisements appears inconclusive.

Investigations of posing biases more generally indicate that left cheek poses dominate (see Lindell[9] for review). Whether posing for painted portraits[10], photographic portraits[11], or selfies to upload to social media[12,13,14], people favour the left cheek. The left cheek's greater emotional expressivity is thought to underlie this posing bias[9]. As the lower two-thirds of the left hemiface is controlled by the emotion-dominant right hemisphere[15,16], the left cheek expresses emotion more intensely than the right[17]. Consequently people offer the left cheek when asked to pose for a photo expressing emotion[18] and perceive models in left cheek portraits as more emotionally expressive than identical models in right cheek portraits[19]. Because emotional content increases engagement[20], Lindell[6] argues that the left cheek's greater emotional expressivity can account for the fact that left cheek images capture more "likes" on Instagram.

Despite the changing landscape of advertising expenditure and the striking growth in social media marketing, little academic research has investigated Instagram advertising[21]. This appears surprising as research examining posing biases in Instagram advertisements offers both theoretical and practical potential. Whereas investigations of print media advertising have been inconsistent[7,8], examinations of posing biases in social media posts more broadly (i.e., non-

advertisements) consistently report a left cheek bias[12,13,14], recently establishing that left cheek Instagram posts gain more "likes" than right cheek posts featuring the same users[6]. Whether social media ads conform to the pattern observed for social media, favouring the left cheek, or print advertising, favouring the right or no cheek, remains to be determined, and would help illuminate the driver of biases in social media advertisements. The present study was thus designed to examine posing biases in Instagram ads to determine whether the pattern matches one of those observed for print advertising[7,8], or is instead consistent with the more general left cheek bias observed for portraits, including images uploaded to Instagram[12]. Given that the left cheek expresses stronger emotion[17], and left cheek images garner more "likes"[6] than right cheek images, we hypothesized a left cheek bias for Instagram advertisements.

Method

Instagram Image Sourcing

Two thousand product advertisements were sourced from Instagram's 'Most Recent' feed in July and August 2019 by searching the hashtag "#ad". Instagram hashtags are included by users to categorise posts; #ad was chosen to source advertisements because this hashtag is recommended by Instagram to transparently and conspicuously disclose that a post is a paid advertisement, in keeping with the Federal Trade Commission guidelines for social media influencers[29]. Two female raters (one undergraduate student aged 22 and one senior researcher aged 47) collected and coded the sample according to the following criteria. Only static images featuring a single model were selected; both full colour and black and white images were included. Images were viewed on a 33.00cm x 55.50cm Dell monitor at a size of 6.50cm by 6.50cm; all images that unambiguously showed a lateral deviation from a full face image were included (deviation ranged from a slight turn to a full profile). The first 1000 female and 1000 male advertisements that met the inclusion criteria were selected.

Image Coding

The two female raters independently coded each advertisement for model gender (female, male), image type (head and torso, full body) and pose orientation (left cheek, right cheek). For image type, images were coded as 'head and torso' if they depicted the model from the navel upward; images including any of the model's body below navel-level were coded as 'full body'. For pose orientation, images were coded as 'left' if the model's head was turned to the right, showing more of the left side of the model's face, and 'right' if the model's head was turned to the left, showing more of the right side of the model's face. Inter-rater reliability was extremely high (r = 1.00).

Results

Binary logistic regression was used to model the effects of gender (male, female) and image type (head and torso, full body) on posing orientation in Instagram advertisements. A test of the full model versus a model with intercept only was significant, $\chi2(3) = 11.776$, p = .008. Model gender significantly predicted pose orientation [β = -0.295 (0.120); CI -0.531, 0.059; Wald's $\chi2 = 5.998$, p = .014], with a stronger left cheek bias for female than male models. Image type showed a trend toward predicting pose orientation, [β = -0.256 (0.132); CI -0.515, 0.003; Wald's $\chi2 = 3.739$, p = .053], with a stronger left cheek bias for full body than head and torso images. The interaction between gender and image type was not significant, [β = 0.124 (0.185); CI -0.239, 0.487; Wald's $\chi2 = 0.446$, p = .504].

INSERT FIGURE 1 ABOUT HERE

As illustrated in Figure 1, Instagram advertisements featured models in left cheek poses

(59.8%) significantly more frequently than expected by a null model where the probabilities of left and right cheek poses are 50:50. Chi-square tests confirm that the greater than expected frequency of left cheek poses was observed irrespective of whether the image featured a female (N = 1000), $\chi 2$ (1) = 64.516, $p < .001$, or a male model (N = 1000), $\chi 2$ (1) = 19.044, $p < .001$, or whether the image focussed on the model's head and torso (N = 825), $\chi 2$ (1) = 16.593, $p < .001$, or was a full body pose (N = 1175), $\chi 2$ (1) = 64.362, $p < .001$.

Discussion

Consistent with the hypothesis, results indicated that Instagram advertisements show a left cheek bias. Irrespective of whether the ads featured a female or male model, in a full body or head and torso pose, left cheek poses were significantly more frequent than right cheek poses. As such, these data demonstrate that the left cheek bias that characterises portraits, from traditional paintings[10] and photographs[11] to selfies[12], extends to paid Instagram promotions. The left cheek bias revealed in Instagram advertisements is, however, inconsistent with previous research examining posing biases in traditional print media advertisements. Burkitt et al.'s[7] investigation of pose orientation in printed magazine ads found an overall right cheek bias, however Thomas et al.'s[8] assessment of posing biases in magazine ads found no overall cheek bias. When Thomas et al. examined the effect of gender however, their results revealed a left cheek bias for ads depicting female models but no bias for male models. Thus the data from previous print advertising investigations present a very mixed picture. As the Burkitt et al.[7] paper included a larger sample (total N = 2664) drawn from a broader range of magazines (total N = 19), here we focus our comparison on Burkitt et al.'s finding of a right cheek bias for print advertising.

Why should a left cheek bias evince for Instagram advertisements when Burkitt et al.[7] found a right cheek bias for magazine advertisements? The very nature of Instagram's social

media platform relies heavily on capturing the attention of the audience. When scrolling through their feeds Instagram users are faced with hundreds, if not thousands, of posts competing for their attention; images consequently rely on their immediate visual impact to grab a distracted viewer's attention rather than being selected for scrutiny via considered and thoughtful deliberation[21,22]. This stands in contrast to print media advertisements wherein the number of competing images is necessarily far more limited. Given the sheer volume of competing content, attentional capture plays a far greater role in social than print media; for example, facebook users "like" 4.5 billion posts per day and Instagram users upload 70 million new posts per day, generating 2.5 billion "likes" daily[23]. Because emotion captures attention automatically and subliminally[24], images that express greater emotion capture a viewer's attention more effectively. Given that left cheek poses express stronger emotion than right cheek poses[17], the left cheek bias observed for Instagram ads suggests that marketers and influencers may be intuitively leveraging the greater emotional expressivity of left cheek poses in their ads, consistent with previous findings of a left cheek bias for selfies uploaded to Instagram[12], and greater engagement generated in response to left than right cheek Instagram posts[6].

Though a left cheek bias was observed for ads featuring both female (62.7% left cheek) and male (56.9% left cheek) models, the bias was significantly stronger for females. This finding is consistent with previous reports of a stronger left cheek bias for portraits and selfies of females than males[10,25], and has been attributed to differences in the genders' willingness to express emotion. Because females are typically more emotionally expressive than males[26,27], and social mores are more encouraging of emotional openness and expressivity in females than males[28], females may be more likely to intuitively offer the emotional left cheek when posing for a photo than males. This argument is consistent with Nicholls et al.'s[19] finding that females

a) rated themselves more emotionally expressive than males, and b) were more likely to pose for a portrait offering the left cheek. It also appears compatible with Thomas et al.'s[8] finding that magazine ads featuring females showed a left cheek bias whereas males showed no cheek bias, the overall pattern again indicating a stronger left cheek bias in ads depicting female than male models.

Whilst the left cheek bias was observed across image types, the present findings also revealed a trend toward a stronger bias for full body poses than posts focussing on the head and torso. Whilst Burkitt et al.[7] did not examine the effect of image type, Thomas et al.[8] also found a leftward bias for full body images (significant for males, bordering on significance for females), however the results for the other images types they included (head only, head and shoulders, visible to waist), were complex, mediated by a significant interaction with gender. For females, they reported a significant left cheek bias for images visible to the waist, and a nonsignificant left cheek bias for head only photos; head and shoulders images showed no cheek biases. For males, there was a significant right cheek bias for head only and visible to waist images, and akin to female models, no bias for head and shoulders images. As such, the present findings of a stronger left cheek bias for full body than head and torso images appear compatible with Thomas et al.'s findings for print advertisements for females (the present head and torso category encompasses Thomas et al.'s head only, head and shoulders, and visible to waist categories).

The findings for males however, diverge, with Thomas et al.'s[8] data suggesting a tendency toward a right cheek bias for head and upper body images of males whereas the present findings instead indicate a significant left cheek bias. As argued previously, the difference in cheek preferences between print and social media advertising is likely to reflect the differing attentional demands posed by the two media formats; the need to grab a viewer's attention is far more competitive in the social media arena, and as emotion captures attention[24], left cheek

poses are likely beneficial. In print media however, the volume of competing content is limited, potentially helping to account for the differing cheek preferences. Indeed, Thomas et al. suggest that the rightward bias they observed for males "… results from a desire to conceal emotion", (p.510), highlighting the potential difference between print and social media advertising.

Whether the predominance of left cheek poses in Instagram advertisements is intentional or incidental is a question for future investigation. As the Lindell[6] study showing that left cheek poses garner more likes had not been published at the time of data collection (July/August 2019) it appears unlikely that influencers and marketers would have been consciously aware that ads featuring left cheek poses may induce a more favourable response from their audience. However it is plausible that, just like the general public, influencers and marketers themselves find left cheek poses more appealing, and accordingly may have intuitively selected photographs for their #ad posts featuring left cheek images. Research asking Instagram influencers, and marketers who employ influencers in their campaigns, about their processes in selecting posts for #ads is needed to determine whether the observed left cheek bias for Instagram ads is a conscious or unconscious phenomenon.

The present study demonstrated that Instagram advertisements favour the left cheek. As recent research has established that left cheek poses gain a more positive response from the audience, generating stronger engagement[6], it appears likely that the use of left cheek poses in Instagram ads would translate into direct benefits for both influencers (in terms of greater engagement) and brands (generating more traffic to websites and more product/service purchases). However as this is the first study to examine posing biases in social media advertising, further research is needed to test these speculations and determine the effects of left and right cheek poses on consumer behaviour. Such research has obvious and immediate

potential benefits; given the size and growth of the social media advertising market, there is a clear need for such investigation.

References

1. Zenith. Social media overtakes print to become the third-largest advertising channel. Retrieved from: https://www.zenithmedia.com/social-media-overtakes-print-to-becomethe-third-largest-advertising-channel/

2. Systrom, K. From our CEO Kevin Systrom (instagram.com/kevin) "Today, we have two big announcements to share. First, Instagram is now a global community of one billion! [Facebook status update 2018, June 20]. Retrieved from https://www.facebook.com/InstagramEnglish/videos/2021766097857435/

3. De Veirman M, Cauberghe V, Hudders L. Marketing through Instagram influencers: The impact of number of followers and product divergence on brand attitude. International Journal of Advertising 2017; 36(5): 798–828.

4. DeMers J. 7 predictions on the future of influencer marketing (2018, April 19). Retrieved from https://www.forbes.com/sites/jaysondemers/2018/04/19/7-predictions-on-the-future-ofinfluencer-marketing/#507db12b581d

5. HopperHQ Instagram Rich List. (2019). Retrieved from https://www.hopperhq.com/blog/instagram-rich-list/

6. Lindell AK. Left cheek poses garner more likes: The effect of pose orientation on Instagram engagement. Laterality 2019; 24(5): 600-613.

7. Burkitt, JA, Saucier DM, Thomas NA, Ehresman C. When advertising turns "cheeky"! Laterality 2006; 11(3): 277-286.

8. Thomas NA, Burkitt JA, Patrick RE, Elias LJ. The lighter side of advertising: Investigating posing and lighting biases. Laterality 2008; 3(6): 504-513.

9. Lindell AK. The silent social/emotional signals in left and right cheek poses: A literature review. Laterality 2013; 18: 612–624.

10. McManus IC, Humphrey NK. Turning the left cheek. Nature 1973; 243: 271–272.

11. LaBar M. Turning the left cheek examined using modern photography. Nature 1973; 245: 338.

12. Bruno N, Bertamini M, Protti F. Selfie and the city: A world-wide, large, and ecologically valid database reveals a two-pronged side bias in naïve self-portraits. PLoS ONE 2015; 10(4): e0124999.

13. Bruno N, Bode C, Bertamini M. Composition in portraits: selfies and wefies reveal similar biases in untrained modern youths and ancient masters. Laterality 2017; 22: 279–293.

14. Lindell AK. Consistently showing your best side? Intra-individual consistency in #selfie pose orientation. Frontiers in Psychology 2017; 8: 246.

15. Patten J. (1996). *Neurological differential diagnosis (2nd ed.).* New York, NY: Springer-Verlag.

16. Demaree, HA, Everhart E, Youngstrom EA, Harrison DW. Brain lateralization of emotional processing: Historical roots and a future incorporating "dominance". Behavioural and Cognitive Neuroscience Review 2005; 4: 3–20.

17. Nicholls MER, Ellis BE, Clement J, Yoshino M. Detecting hemifacial asymmetries in emotional expression with 3D computerised image analysis. Proceedings of the Royal Society 2004; 271: 663-668.

18. Nicholls MER, Clode D, Wood SJ, Wood AG. Laterality of expression in portraiture: Putting your best cheek forward. Proceedings of the Royal Society of London (Section B) 1999; 266: 1517–1522.

19. Nicholls MER, Clode D, Lindell AK, Wood AG. Which cheek to turn? The effect of gender and emotional expressivity on posing behaviour. Brain and Cognition 2002; 48: 480484.

20. Berger J & Milkman KL. What makes online content viral? Journal of Marketing Research 2012; 49(2): 192–205.

21. MacDowall LJ, de Souza P. 'I'd double tap that!!': Street art, graffiti, and Instagram research. Media, Culture & Society 2018; 40(1): 3–22.

22. Suler J. Image, word, action: Interpersonal dynamics in a photo-sharing community. CyberPsychology & Behavior 2008; 11(5): 555–560.

23. WebFX. The internet in real time. Retrieved from: https://www.webfx.com/internet-realtime/

24. Yiend J. The effects of emotion on attention: A review of attentional processing of emotional information. Cognition and Emotion 2010; 24(1): 3–47.

25. Manovich L, Ferrari V, Bruno N. Selfie-takers prefer left cheeks: Converging evidence from the (extended) selfiecity database. Frontiers in Psychology 2017; 8: 1460.

26. Cherulnik, P. Sex differences in the expression of emotion in a structured social encounter. Sex Roles 1979; 5(4): 413-424.

27. Fischer A, LaFrance M. What drives the smile and the tear: Why women are more emotionally expressive than men. Emotion Review 2015; 7(1): 22-29.

28. Shields SA. (2002). *Speaking from the heart: Gender and the social meaning of emotion.* Cambridge, UK: Cambridge University Press.

29. Federal Trade Commission (2019). *Disclosures 101 for Social Media Influencers.* Retrieved from: https://www.ftc.gov/system/files/documents/plain-language/1001a-influencerguide-508_1.pdf

Figure Caption

FIGURE 1 Percentages of left and right cheek poses as a function of a) model gender (female vs male) and b) image type (full body vs head and torso).