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No influence of face familiarity on the cheerleader effect

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ABSTRACT

The cheerleader effect describes how faces are perceived as more attractive when presented in a group rather than alone. Given differences in how familiar versus unfamiliar faces are perceived and represented, we hypothesized that the cheerleader effect may be diminished/absent for familiar faces. In Experiment 1, targets were rated for attractiveness when presented alone and in groups, with these selected to span the continuum of prior familiarity. Our results identified the cheerleader effect, alongside an increase in attractiveness with increasing familiarity, but no interaction between these two effects. In Experiment 2, we instructed participants to rate the target "person" rather than "face" to increase the salience of any pre-existing impressions. Again, the results showed no influence of familiarity on the size of the cheerleader effect. Taken together, the cheerleader effect was robust with respect to face familiarity, perhaps suggesting underlying mechanisms that are more general rather than face specific.

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Introduction

Facial attractiveness is perceived rapidly (Willis & Todorov, 2006) and perhaps even automatically (Olson & Marshuetz, 2005; Ritchie et al., 2017). Across individuals, differences in attractiveness attributed to the face can be explained by characteristics like symmetry, averageness, and sexual dimorphism (e.g., Grammer & Thornhill, 1994; Jones & Jaeger, 2019; Little et al., 2011). However, the same person's face can also vary substantially in how attractive it is perceived to be (Jenkins et al., 2011). This variation may be the result of changes in facial expression (e.g., Golle et al., 2014), background colour (e.g., Elliot & Niesta, 2008), facial hair (e.g., Neave & Shields, 2008), and so on. In addition, simply appearing in a group, rather than alone, can increase perceived attractiveness (e.g., Walker & Vul, 2014) and this has been termed "the cheerleader effect" (Rashid & Fryman, 2008). Importantly, several lines of research provide reason to hypothesize that such an effect might be limited to unfamiliar faces, and researchers have yet to investigate familiar face perception within this field.

The cheerleader effect

Faces are generally perceived to be more attractive when surrounded by a group than when presented alone. The benefit of appearing in a group is relatively small (approximately 1.5-2.0% increase in attractiveness) but seemingly robust (e.g., Carragher et al., 2018, 2020, 2021). While this cheerleader effect is now well-established, the mechanism(s) behind it continue to be debated.

Walker and Vul (2014) initially proposed an account based upon ensemble encoding. When viewing multiple elements in a scene, the visual system extracts summary statistics such as the ensemble average (e.g., Ariely, 2001). This process is thought to provide a compact representation of what could be a complex environment. For faces, this includes the average expression, gender, identity, and attractiveness of a group (e.g., de Fockert & Wolfenstein, 2009; Haberman & Whitney, 2007, 2009; Kramer et al., 2015; Luo & Zhou, 2018; Neumann et al., 2013). Importantly, subsequent recall appears to show a bias whereby individual items are remembered as being more similar to the average (e.g., Brady & Alvarez, 2011; Griffiths et al., 2018). Since

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average faces are often perceived as more attractive (e.g., Langlois & Roggman, 1990; Rhodes, 2006), the individual face therefore benefits from having been seen in a group. In line with this explanation, unattractive faces received a greater benefit from appearing in a group than attractive ones (Burns et al., 2021).

However, several pieces of evidence argue against this account. For instance, individual faces showed a greater benefit from appearing in a group of unattractive faces rather than attractive ones (Ying et al., 2019). Similarly, attractive faces were perceived to be even more attractive when presented in a group, with the opposite pattern evident for unattractive faces (Lei et al., 2020). Taken together, these results instead support a contrast account, whereby individual faces are contrasted away from the attractiveness of the group.

Finally, some pieces of evidence are difficult to explain using either of these accounts. For example, the cheerleader effect was still present when individual faces were surrounded by repetitions of the same image or even pictures of houses (Carragher et al., 2019). In such cases, researchers have instead proposed a social inference account (Carragher et al., 2019; Ying et al., 2019), which may operate alongside either or both of the above accounts. The idea is that individual faces are perceived as more popular when surrounded by other faces (and also perhaps signals of wealth and social status like houses), endorsing the face as being more desirable and resulting in higher appraisals of attractiveness. In general, evidence appears to support the presence of multiple mechanisms at work in the various "friend effects" present across studies (Burns et al., 2021).

Face familiarity

To date, studies on the cheerleader effect have only featured unfamiliar faces. By definition, decisions regarding these faces are based on the limited information contained within the images presented. Such information includes characteristics like age and sex (e.g., Bruce et al., 1993; Rhodes, 2009), although viewers also attribute a variety of social traits like attractiveness (e.g., Jones & Kramer, 2021; Willis & Todorov, 2006). These types of information are classically referred to as "visually derived semantic codes" (Bruce & Young, 1986).

In contrast, familiar faces activate "identity-specific semantic codes" (Bruce & Young, 1986). In other words, the information already known regarding the person, such as their occupation, friends, etc. In addition, through this prior experience/exposure, impressions of attractiveness will have already been formed. For this reason, the influence of the context in which the face is presented (e.g., in a group versus alone) may be smaller or even absent since judgements could be based, at least to some extent, on pre-formed impressions of the person. By comparing the consistency of ratings attributed to different images of the same identities, Mileva et al. (2019) found that ratings were more tightly clustered for images of the same familiar identity in comparison with the same unfamiliar identity. Further, Koca and Oriet (2023) showed that attractiveness ratings became more consistent over time, for different images of the same identity, as that individual was being learned (cf. Gogan et al., 2023). Finally, Ritchie et al. (2018) found that higher ratings of likeness (i.e., assigned to those images judged to be a very good likeness, with its specific meaning left to be interpreted by the participant) were given to *all* images of a person who was more familiar, perhaps suggesting a shift away from image-level judgements in conjunction with a larger influence of an internal representation (see also Jenkins et al., 2011). Together, these results argue that a stable social impression forms as a face becomes familiar, and this is subsequently used as a cue when rating images of these familiar identities, thereby decreasing the influence of any particular image or, we propose, viewing context.

Indeed, research within the domain of serial dependence has provided direct evidence that judgements of familiar faces were less susceptible to context effects. When viewed in a sequence (i.e., one after the other), ratings of attractiveness often show assimilation to the previous face (e.g., Kondo et al., 2012; Kramer et al., 2013; Kramer & Jones, 2020). That is, a face is rated as more attractive when appearing after an attractive face rather than an unattractive one. However, Kok et al. (2017) found that, while this assimilation was evident for unfamiliar faces, there was no influence of the previous face on current ratings for familiar (celebrity) faces. As above, these results suggest that familiarity with a face produces more stable judgements which, as a consequence, are more resistant to context.

We might also predict that familiar faces are less susceptible to the cheerleader effect as a result of selective attention. Previous research has shown that viewers spend more time looking at the attractive faces within a group (Maner et al., 2003; van Osch et al., 2015), causing these to have a larger influence when evaluating the group's overall attractiveness (van Osch et al., 2015). Although the cheerleader effect refers to the evaluation of an individual within the group rather than the group as a whole, we might predict that greater attention to the familiar face within a group (Nahari et al., 2019) would lead to a larger weighting of that face within the group's encoded average. As such, any mechanism based on a comparison with the average should produce a smaller effect since this average would be more similar to the familiar face (compared with an unfamiliar one). However, recent evidence showed that strict time constraints (i.e., where less time was available to pay attention to the less attractive faces) failed to produce a stronger cheerleader effect, arguing against an account based on selective attention (Carragher et al., 2020). Further, if selective attention to the most attractive face in the group could explain the cheerleader effect, we should predict that the largest effect occurs for an unattractive (and hence unattended) face presented in an attractive group. However, no cheerleader effect was found in this condition (Experiment 3; Carragher et al., 2021). Of course, these results may apply to selective attention regarding the most attractive faces but the interplay between familiarity, selective attention, and the cheerleader effect has yet to be considered.

The current study

The evidence described above suggests that face familiarity may influence the size of the cheerleader effect. To investigate this prediction, pre-existing familiarity with the target face (i.e., the individual to be rated) was utilized. Since familiarity is naturally continuous, we chose to incorporate this variability (see Kramer et al., 2018) rather than to apply an artificial dichotomy (familiar vs unfamiliar) as is often the case in research involving this factor (e.g., Balas et al., 2023; Mileva et al., 2019). In addition, we employed model-based Bayesian inference to determine the size of the cheerleader effect, along with any influence of familiarity.

Experiment 1

In this first experiment, we followed the basic design and procedure of Carragher et al. (Experiment 1; 2021), although we focused here on attractiveness judgements only. Importantly, however, these and other researchers have only featured unfamiliar faces as stimuli. Here, we purposely selected faces whose familiarity varied across our participants in order to investigate whether this factor influenced the size of the cheerleader effect.

Methods

Participants

A sample of 71 participants (58 women, 13 men; age $M = 24.5$ years, $SD = 4.6$ years; 70% self-reported ethnicity as White) provided written, informed consent online before taking part, and received an onscreen debriefing upon completion of the experiment. Participants were recruited by word of mouth (e.g., through asking friends and family, and sharing the experiment's weblink on social media, etc.).

Both Experiments 1 and 2 were approved by the university's ethics committee (ref. 17803) and were carried out in accordance with the provisions of the World Medical Association Declaration of Helsinki.

The data from an additional eight participants were excluded because these individuals failed to respond correctly to both attention checks (see below for details).

Stimuli

Our distractors (i.e., the faces in the group that were not rated for attractiveness) comprised 150 women of national (rather than international) fame, known within countries that were purposely avoided when recruiting participants for this experiment. These included Venezuela, Australia, and Switzerland, among others. Therefore, these were chosen to be unfamiliar to our participants.

For our targets, we selected 50 female celebrities. Some of these were nationally known within countries from which we recruited participants (e.g., UK and Czech Republic, where the authors are based), while others were internationally famous (e.g., from the UK and US). As such, we aimed to present identities that spanned the full range of familiarity across our participants.

For each of the 200 identities, we downloaded a photograph using Google Images searches, with each image depicting the individual facing roughly front-on and with their face free from occlusions. These images were then cropped to contain only the head and neck, and in some cases, the top of the shoulders, and were resized to 300×300 pixels. (Backgrounds were not removed.)

In line with previous research, the 50 "group" stimuli were created by combining four images (three distractors and one target) in a 2×2 array (e.g., Carragher et al., 2021). Each target was randomly assigned three distractors (each of which featured in only one group), with the location of the target within the array (i.e., the specific corner) evenly distributed across groups. Once these arrays had been created, they were held constant across participants (due to the limitations imposed by the online platform).

Procedure

The experiment was completed using the Gorilla online testing platform (Anwyl-Irvine et al., 2020). Participants were prevented from using mobile phones (via settings available in Gorilla) to ensure that images were viewed at an acceptable size onscreen. After consent was obtained, participants provided demographic information (age, gender, and ethnicity). Next, participants completed both the "alone" and "group" tasks, with the order of these counterbalanced across participants. The procedure for both tasks closely followed previous research (e.g., Carragher et al., 2021) and is illustrated in Figure 1.

In the "alone" task, on each of the 50 trials, participants were initially presented with the target face for 1,000 ms. A red frame then appeared around the border of the target face for 1,000 ms. Finally, the face and border disappeared and were replaced by a visual analogue scale (VAS). Participants were asked onscreen "how attractive was the target face?" and responded by moving a slider along a horizontal line to select their response. The current position of the slider (a value from 0 to 100) was not displayed onscreen and so participants made their response based solely on the slider's visual position along the line. Participants were allowed to alter and refine their choice as needed before submitting their response. Labels were displayed alongside the left ("very unattractive") and right ("very attractive") endpoints of the line. Initially, the line was presented without a slider, which then appeared as a result of the participant's first selection along the line (and could then be altered). As such, participants were not able to skip through trials by relying simply on the slider's default position (since there was no such position).

In the "group" task, on each of the 50 trials, participants were initially presented with the group array for 2,000 ms. A red frame then appeared around the border of the target face for 1,000 ms. Finally, the array and border disappeared, and these were replaced by a VAS (identical to the one used in the "alone" task). Responses were provided as in the "alone" task.

In both tasks, responses were self-paced and trial orders were randomized for each participant. In addition, participants completed two practice trials (identified as such) at the start of each task. These allowed participants to familiarize themselves with the trial structure of the tasks and presented target faces alone or in groups (as applicable). For these trials, we used images featured in previous research which depicted (non-famous) bridesmaids (Carragher et al., 2021). As such, no task stimuli were used in these practice trials.

In addition, we included an attention check within the randomly ordered presentation for each task, given that attentiveness is a common concern when collecting data online (Hauser & Schwarz, 2016). For the "alone" task, rather than a face, we presented a box containing the text "Attention Check" with a black, and then red, border (following the task's timings described above). On the response screen, alongside the VAS, the instructions asked participants to "please respond with "very attractive" to show you're paying attention". For the "group" task, this instruction was adapted to request a "very unattractive" response instead.

Finally, after completing both the "alone" and "group" tasks, participants were presented with a final task in which they were instructed, for each of the 50 identities, to rate how familiar they were with the person. Specifically, we clarified that this referred to familiarity with the person *before* taking part in the experiment. For each identity, participants were shown the "alone" image onscreen (without any coloured border), along with the question "how familiar are you with X?" (where X was the person's name).

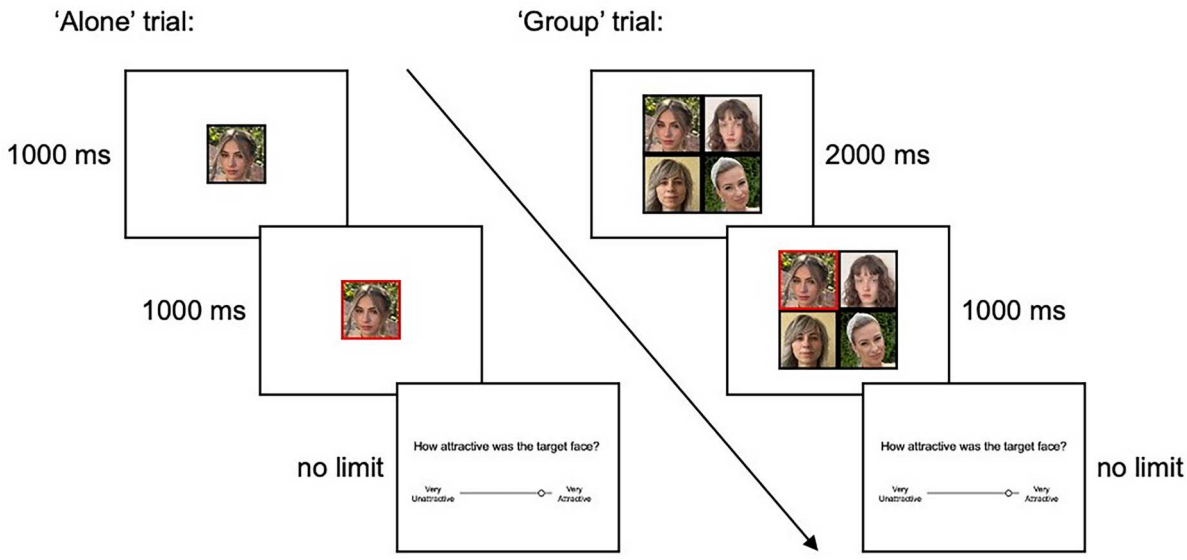

Figure 1. Example "alone" and "group" trials for Experiment 1. (Copyright restrictions prevent publication of the original images used in this experiment. Images shown here feature identities who did not appear in the experiment but have given permission for their images to be reproduced here.)

Responses were provided using the same 0–100 VAS as in the earlier tasks except for the labels displayed alongside the left ("highly unfamiliar") and right ("highly familiar") endpoints of the line. Identity order was randomized for each participant.

Analytic strategy

We excluded participants who failed to respond correctly to both attention checks ($n = 8$). Since responses were given using a 0–100 VAS, we defined "correct" as responding with a value of less than 25 to represent "very unattractive", and a value of greater than 75 to represent "very attractive".

Next, we used model-based Bayesian inference to interpret the data, specifically by fitting a linear multilevel regression model. For the population-level effects, attractiveness ratings were predicted from continuous (participant-mean centred) familiarity ratings, a dummy-coded variable indicating condition (whether the image was presented alone or in a group, with the latter as the reference category), and their interaction. The group-level (or random) effects included an intercept for each image and each participant, as well as a participant-specific slope for familiarity, condition, and their interaction, allowing for variation in the effect that these had on each individual participant's attractiveness ratings.

We set weakly-informative priors on all model parameters (Gelman et al., 2017) that had little influence on the data, and used a Gaussian likelihood (i.e., we assumed variables were normally distributed, analogous to ordinary least squares). For the coefficients representing the intercept, familiarity ratings, condition, and the interaction, Gaussian distributions with a mean of zero and a standard deviation of 100 were used, which entertained very large effects in either direction. The model was estimated using the brms package (Bürkner, 2017) in the R programming language. Four Markov chains were run, with each having 3,000 warmup and 6,000 post-warmup iterations.

To make inferences about the size of effects, we used the posterior probability of effects being in a specific direction (Makowski et al., 2019), calculated via the proportion of the posterior distribution being above or below zero, $p(\boldsymbol{\theta} > 0 \text{ or } \boldsymbol{\theta} < 0)$, given the observed data. This was similar in intention to classical null-hypothesis significance testing but provided the probability that the hypothesis was different to zero given the data, and not the converse (Welsch et al., 2020). We also calculated 95% credible intervals (CIs) for all posterior estimates, which showed the credible range of effects given the observed data and model.

Results and discussion

The model converged, and all parameters had an $\hat{R} \leq 1.01$. Overall, the model explained 52.3%, 95% CI

[51.1%, 53.4%], of the variance in attractiveness ratings. The familiarity estimate, $b = 0.15$, [0.12, 0.19], $p(\boldsymbol{\theta} > 0) = 100\%$, was positive and small, with a 1-unit increase in familiarity resulting in an increase of 0.15 units in perceived attractiveness. Previous research has shown that familiarity with a face resulted in increased attractiveness ratings (e.g., Halberstadt et al., 2013; Peskin & Newell, 2004). This is thought to occur because prior exposure aids processing fluency, resulting in more positive judgements of the face (e.g., Kramer & Parkinson, 2005; Rhodes et al., 2001).

The condition estimate, $b = -2.54$, [−3.68, −1.44], $p(\boldsymbol{\theta} < 0) = 100\%$, was negative and larger in magnitude, suggesting that images decreased by 2.54 units of attractiveness when viewed alone in comparison with the same images presented in a group. This result represents the cheerleader effect, where targets are judged to be more attractive when viewed in groups. The size of the group benefit is also in line with previous research (e.g., Carragher et al., 2020, 2021).

Finally, the interaction estimate, $b = 0.00$, [−0.03, 0.03], $p(\boldsymbol{\theta} > 0) = 53\%$, provided compelling evidence that the effect of familiarity was the same for the two conditions (or at least the difference was negligible). In other words, the cheerleader effect (i.e., the gain in attractiveness when viewed in a group) remained consistent across changes in familiarity. These results are illustrated in Figure 2.

Experiment 2

In our first experiment, we found no evidence that familiarity influenced the size of the cheerleader effect. However, it is worth noting that we followed previous research by asking participants "how attractive was the target face?" (e.g., Carragher et al., 2021). Problematically, it is unclear as to how the word "face" was interpreted by our participants. For familiar identities, this could be thought of as referring to the face in that particular image *or* the person's face more generally. The former interpretation might encourage participants to provide an image-based judgement, which could exclude any influence of prior familiarity, in contrast with the latter interpretation. Therefore, the specific wording that was used could have resulted in a decrease or absence of any familiarity influence (for evidence that wording can influence face image learning, see Kramer et al., 2020).

To address this potential issue with interpretation, our second experiment involved changing the instructions to ask participants about the target "person" rather than "face". In this way, if familiarity could potentially influence the cheerleader effect, we expected this shift in emphasis to increase the salience of this influence.

Methods

Participants

A sample of 70 participants (58 women, 12 men; age $M = 27.6$ years, $SD = 8.3$ years; 64% self-reported ethnicity as White) provided written, informed consent online before taking part, and received an onscreen debriefing upon completion of the experiment. Participants were again recruited by word of mouth. There was no overlap between this sample and those who participated in Experiment 1.

The data from an additional ten participants were excluded because these individuals failed to respond correctly to both attention checks.

Stimuli, procedure, and analytic strategy

All details were the same as in Experiment 1 with one exception. Regarding the procedure, during both the "alone" and "group" tasks, participants were asked "how attractive was the target person?" (rather than "face" as in Experiment 1).

Results and discussion

The model converged, and all parameters had an $\hat{R} = 1.00$. Overall, the model explained 53.9%, 95% CI [52.8%, 55.0%], of the variance in attractiveness ratings. The familiarity estimate, $b = 0.12$, [0.09, 0.14], $p(\boldsymbol{\theta} > 0) = 100\%$, was positive and small, with a 1-unit increase in familiarity resulting in an increase of 0.12 units in perceived attractiveness. The condition estimate, $b = -2.10$, [−3.37, −0.84], $p(\boldsymbol{\theta} < 0) = 100\%$, was negative and larger in magnitude, suggesting that images decreased by 2.10 units of attractiveness when viewed alone in comparison with the same images presented in a group. Finally, the interaction estimate, $b = 0.00$, [−0.03, 0.02], $p(\boldsymbol{\theta} > 0) = 39\%$, provided compelling evidence that the effect of familiarity was the same for the two conditions (or at

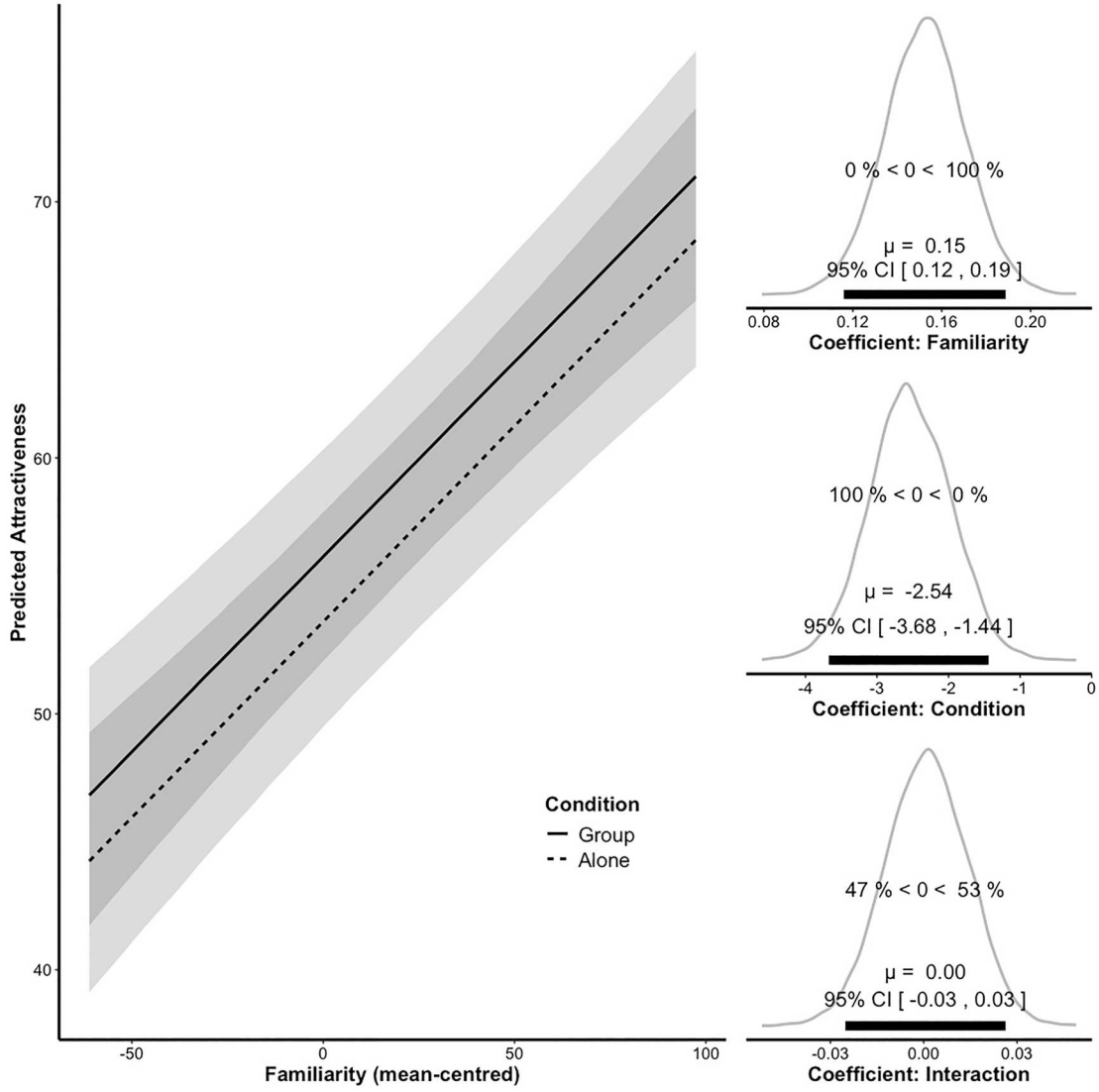

Figure 2. Left panel – model estimates of attractiveness ratings for each condition, including 95% credible intervals. Right panels – posterior distributions for the model's effects of familiarity, condition, and their interaction, highlighting the probabilities of these effects being in a particular direction.

least the difference was negligible). These results were very similar to those found in Experiment 1 and are illustrated in Figure 3.

General discussion

The cheerleader effect refers to the finding that faces are perceived to be more attractive when surrounded by a group than when presented alone. The benefit of appearing in a group is known to be relatively small (approximately 1.5-2.0% increase in attractiveness) but seemingly robust (e.g., Carragher et al., 2018, 2020, 2021). Here, in Experiment 1 (2.54%) and Experiment 2 (2.10%), we replicated this increase in attractiveness when comparing "alone" versus "group" presentation conditions. In addition, we found that increasing familiarity with a face resulted in an increase in perceived attractiveness, which supports previous evidence (e.g., Halberstadt et al., 2013; Peskin & Newell, 2004), where prior exposure is thought to aid processing fluency, producing more positive judgements of the face (e.g., Kramer & Parkinson, 2005; Rhodes et al., 2001). Finally, the lack of an interaction between these two factors provided strong evidence that familiarity did not influence the size of the cheerleader effect, with mean estimates of zero for the interaction coefficient in both experiments.

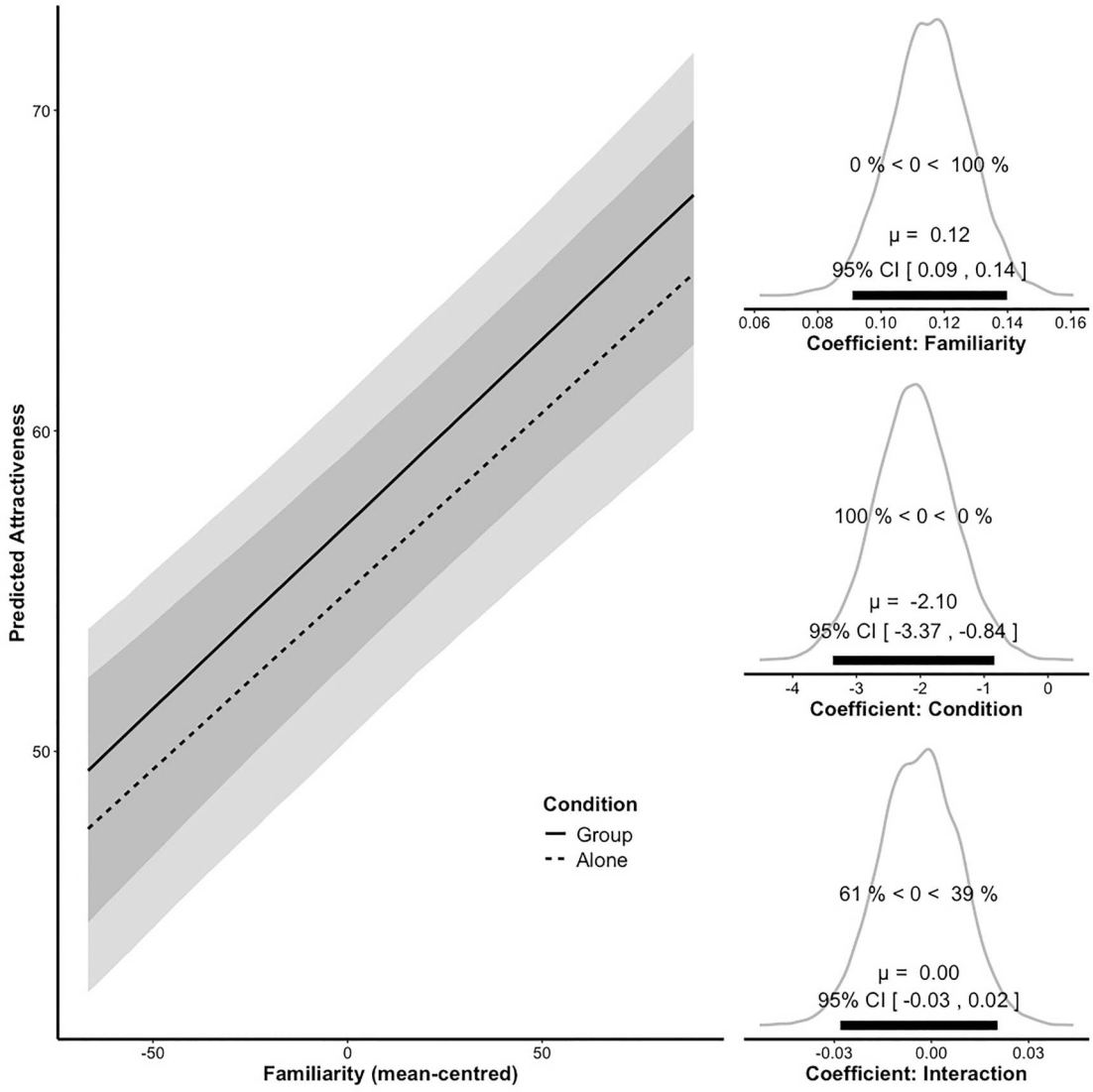

Figure 3. Left panel – model estimates of attractiveness ratings for each condition, including 95% credible intervals. Right panels – posterior distributions for the model's effects of familiarity, condition, and their interaction, highlighting the probabilities of these effects being in a particular direction.

As we argued in the introduction, there are several reasons for hypothesising an influence of familiarity – in particular, that the cheerleader effect might be absent for familiar faces. Greater familiarity leads to an increase in the consistency of ratings for different images of the same person, which suggests a larger reliance on person- rather than image-level information (Koca & Oriet, 2023; Mileva et al., 2019). Familiarity with a face also decreases the influence of context (e.g., assimilation towards the previous image – Kok et al., 2017). Finally, familiar faces are likely to receive greater attention within the group (Nahari et al., 2019), perhaps leading to a larger weighting of that face within the group's encoded average. As such, a comparison with the average should result in a smaller cheerleader effect since this average would be more similar to the familiar face. However, despite these reasons for our prediction, we found that the cheerleader effect was consistent in size across the continuum of familiarity.

Our predicted influence of familiarity involved participants referencing their pre-formed impressions of the identities (where available) when rating attractiveness. Therefore, we considered that the lack of an influence in Experiment 1 may have been due to the wording of our instructions. In line with previous studies, participants were asked to rate the attractiveness of the target "face" (e.g., Carragher et al., 2021),

but it is difficult to know how this instruction was interpreted. For familiar identities, should participants refer to the face in that particular image *or* the person's face more generally? The former interpretation might encourage participants to provide an image-based judgement while the latter may involve a larger influence of pre-existing impressions. Therefore, Experiment 2 instructed participants to rate the target "person" rather than "face" in order to make more salient any prior knowledge, and hence the influence of familiarity if indeed there was one. However, our second experiment also found no role of familiarity in the cheerleader effect. Even so, we encourage researchers to choose their instructions with care since evidence has shown that they can affect outcomes in other areas of face research (Kramer et al., 2020).

Why might familiarity *not* influence the cheerleader effect? One possibility is that the mechanism underlying the cheerleader effect is sufficiently low-level and/or general purpose that prior familiarity with (and knowledge of) the identity simply failed to play a role. In line with this idea, researchers have shown that viewers encoded the set average when presented with a group of familiar faces, even though there seems to be no obvious advantage to be gained from merging separate, familiar identities (Neumann et al., 2013). As such, mechanisms that may, for example, prove useful when applied to unfamiliar faces could also, as a by-product, continue to be applied after faces become familiar. Indeed, these mechanisms may not even be face-specific (e.g., they have been demonstrated with images of houses – Carragher et al., 2019), in which case there may be no reason for familiarity to be considered.

Another explanation may be found in the accounts of the cheerleader effect presented earlier. While the current study was not designed to differentiate between these proposed explanations, the social inference account (Carragher et al., 2019; Ying et al., 2019) – that faces in groups are seen as more popular and therefore more attractive – might be expected to apply to both unfamiliar and familiar faces. At both ends of the familiarity continuum, identities may benefit equally from these perceptions.

It is less clear as to how our findings align with accounts based upon ensemble encoding (Walker & Vul, 2014) or contrast (Lei et al., 2020). These mechanisms first involve the extraction of a representation of the group, which in turn leads to the individual face being perceived as more or less like this representation. As discussed above, our prediction was that any ensemble of the group would appear more similar to a familiar face since we expect this face to receive more attention during viewing of the group. However, at present, this remains a potential avenue for future research. If this prediction is borne out in the data, we might then derive more specific hypotheses regarding familiarity in relation to these two accounts.

While our focus in the current set of experiments was on the familiarity of the target faces, further investigation might also consider the familiarity of the distractors (i.e., the other members of the group). Here, we chose distractors that were unlikely to be known to our participants, given the countries from which these two groups were sampled. However, we acknowledge that our participants were not required to rate their familiarity with the 150 distractors, and so a small number of these identities may have been recognized across our participant sample. It is unclear as to how distractor familiarity might influence the cheerleader effect (if at all). As mentioned earlier, researchers have shown that ensemble encoding takes place even when individuals are familiar (Neumann et al., 2013) and so it may be that viewers' familiarity with the distractors also plays no role in the cheerleader effect. Again, this remains a potential topic for further exploration.

To conclude, previous evidence gave us reason to predict that familiarity with a target face might influence the size of the cheerleader effect. Across two experiments, we found strong evidence that this was not the case – faces increased in attractiveness when viewed in a group (versus alone), and the size of this increase remained consistent across the continuum of prior familiarity with the identity. As such, the cheerleader effect appears to be robust in this regard, perhaps suggesting more general underlying mechanisms rather than those that are face specific.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

All data are publicly available at: https://osf.io/uzvr4/

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