Dressing up posture: The interactive effects of posture and clothing on competency judgements

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Abstract

Individuals often receive judgements from others based on their clothing and their posture. While both of these factors have been found to influence judgements of competency independently, their relative importance in impression formation are yet to be investigated. We address this by examining interactive effects of posture and clothing on four competency measures; confidence, professionalism, approachability, and likeliness of a high salary. Participants rated photographs of both male and female models pictured in different postures (strong, neutral, weak) in smart clothing (a suit for males; both a trouser suit and skirt suit for females) and casual clothing. We confirm that posture manipulations affected judgements of individuals differently according to the clothing they were pictured in. The nature of these interactions varied by gender and, for women, competency judgements differed according to attire type (trouser or skirt suit). The implications of these findings in relation to impression formation are discussed.

Keywords: nonverbal, clothing, posture, impression formation

Introduction

When individuals form impressions of others, they are often influenced by nonverbal behaviours of another person and tend to rely more heavily on these when verbal information is ambiguous or absent (Cassell, McNeill, & McCullough, 1999; Ekman & Friesen, 1972; Mehrabian, 1968). Two factors that appear to communicate substantial information about an individual include their posture and clothing. These factors have received a lot of attention in recent research, particularly in terms of how they may influence judgements about the competency of an individual. However, while research has highlighted the independent contribution of these factors, little is known about their relative importance when forming impressions and whether they interact during competence appraisal. Similarly, research has not considered how such an interaction could vary according to gender of the subject. This study sought to investigate this further.

Posture

The benefits of adopting a strong posture in interactive situations are considerable. Research shows that adopting a strong, confident posture (in comparison to a weak, submissive posture) can make the person feel more positive (Stepper & Strack, 1993), have greater confidence in their beliefs (Briñol, Petty, & Wagner, 2009), and be more persistent when trying to solve (impossible) puzzles (Friedman & Elliot, 2008; Riskind & Gotay, 1982). Adopting strong, power poses can also cause people to feel more powerful, and specific power poses (fist-clenching) have been found to increase feelings of power in men (Schubert & Koole, 2009). Furthermore, Carney, Cuddy, and Yap (2010) found that when male participants adopted a strong 'power' pose, they reported feeling more powerful, engaged in more risk-taking behaviour, and experienced hormonal changes (increased testosterone, reduced cortisol). Adopting these power poses also has important implications; they can make people feel physically stronger (Lee & Schnall, 2014), more resilient to pain (Bohns & Wiltermuth, 2012), and

perform better in job interviews (Carney, Wilmuth, & Yap, 2015). Therefore, a natural association between strong postures and feelings of power appears to be apparent.

The positive effects of posture are reciprocal; when people are placed in high power roles, they start to adopt more powerful postures (Leffler, Gillespie, & Conaty, 1982). People with high dominance portray this nonverbally; they have stronger postures; are more upright when seated, have a more expansive body position, and lean toward others more (Carney, Hall, & LeBeau, 2005). Similarly, people with a rigid, upright posture are often perceived as being more dominant (Hall, Coats, & LeBeau, 2005) and more intelligent (Murphy, Hall, & Colvin, 2003). The positive effects of strong postures are apparent even in children, who are perceived to be more 'tough' and more likely to be successful if they sit in an upright position (Weisfeld & Beresford, 1982). Strong postures however, appear to affect men and women differently. Men are perceived to be more dominant than women in general (Schwartz, Tesser, & Powell, 1982), particularly when their strong poses involve open legs (Aries, Gold, & Weigel, 1983), though women, when performing open body postures, have also been perceived to be more 'tough' (Cashdan, 1998). It is clear then that strong postures provide clear intrapersonal benefits to an individual over other, weaker postures by affording the individual feelings of power, and these benefits are portrayed interpersonally.

Clothing

While much attention has been afforded to an individual's posture in making competency judgements, the individual's clothing is also an important factor. Like posture, the way people dress has been shown to impact upon their thoughts and actions, and affect how they are perceived by others. For instance, individuals have been found to be more aggressive when wearing a black sports kit (Frank & Gilovich, 1988) or a hood and cap (Zimbardo, 1969), though women are less aggressive when wearing a nurse's uniform (Johnson & Downing, 1979). These observations can be explained through the concept of *enclothed cognition*, a term proposed by Adam and Galinsky (2012) to explain the

phenomenon of people adopting the traits and properties they associate with the clothes they wear. To demonstrate this, they found that performance on a cognitive (Stroop) task improved when participants wore a doctor's lab coat, but deteriorated when they were told it was a painter's coat. Similarly, Fredrickson, Roberts, Quinn, and Twenge (1998) have found that wearing revealing clothing (a swimsuit) can impair women's performance in a mathematics task due to the additional attentional resources demanded by self-objectification. Together, these results suggest that clothing provides individuals with an identity that can govern their behaviour and change their thoughts and feelings.

While dress style can exert intrapersonal effects on individuals, characteristics about the individual can also be identified by observers through their clothing and impact how they are perceived. For instance, in academia, students are judged by teachers and their peers to be more intelligent when dressed smartly (Behling & Williams, 1991). Similarly, teachers are judged as more intelligent when dressed in smart clothes, but more interesting when dressed casually (Morris, Gorham, Cohen, & Huffman, 1996). In a professional context, individuals are considered to have greater expertise, knowledge, and credibility when dressed smartly (Dacy & Brodsky, 1992), and even subtle differences in smart clothing can have an impact on how individuals are perceived: In a study by Howlett, Pine, Orakçioglu, and Fletcher (2013) participants judged a man wearing a made-to-measure suit as being more confident, more successful, more flexible in personality, and more likely to earn a high salary compared to when he was wearing a standard 'off-the-peg' suit. Similarly, Forsythe (1990) found that participants judged women to be more forceful in job interviews, and were more likely to recommend them for hiring, when they were dressed in a more masculine style (a navy suit) compared to a more feminine style (a 'soft' beige dress).

The way individuals dress clearly affects how they are perceived by others but, crucially, these judgements appear to vary by context: Griffiths (2009) found that when female violinists were shown

performing a piece of music in concert dress, they were not only perceived as being more appropriately dressed, but also more technically proficient and more musically competent compared to when wearing a nightclub dress. Similarly, women dressed provocatively in a high profile (managerial) job are judged as less competent than when dressed more conservatively, but this effect does not hold when they are in a low profile (receptionist) job (Glick, Larsen, Johnson, & Branstiter, 2005). These effects have been replicated even with minute clothing adjustments: Howlett, Pine, Cahill, Orakçıoğlu, and Fletcher (2015) found that women in high-status roles were judged as being less competent (intelligent, confident, trustworthy, responsible, authoritative, and organised) when pictured in a slightly shorter skirt with an extra blouse button undone, and more competent when dressed more conservatively (slightly longer skirt, blouse buttons fastened). Again, this effect was not observed for women in less senior roles. These results reveal that even minor variations in clothing can affect the way people (women in particular) are perceived by others, and that such perceptions can vary according to context.

Clothing-based appraisals of individuals vary by the context in which they are presented; specifically, the status attributed to them. Previous studies have investigated how clothing manipulations elicit differences in competency judgements when their status is provided through a description of their role (e.g. Glick et al., 2005; Howlett et al., 2015) but not when provided through their posture. Given that the power status of an individual can be manipulated more accurately through their posture than through a role attributed to them (Huang, Galinsky, Gruenfeld, & Guillory, 2010), we would expect posture to moderate the effects of clothing-based competency judgements. Specifically, a casually-dressed person may be more likely to benefit from a high status power pose but, for a person that is already dressed smartly, a power pose would add relatively little to their perceived competency. As posture and clothing are both strong moderators of competency judgements, the relative importance of these two factors in forming judgements should be investigated.

Clothing and posture manipulations can also affect men and women differently. Men seem to be more naturally suited to power posing (Aries et al., 1983; Schwartz et al., 1982) and women are more likely to be judged differently according to their attire (Morris et al., 1996). Research has not considered whether interactions between posture and clothing vary by gender, but these results suggest that women may be more affected by these manipulations than men. Given that provocativeness can often be a factor in determining creditability judgements of women (Glick et al., 2005; Howlett et al., 2015), as can the masculinity of their dress (Forsythe, 1990), an expansion on attire type for women in smart clothing (trouser suit vs skirt suit) may also elicit differences in credibility judgements, and may vary by posture. This question that has not been considered by research to date.

The current study

In our experiment, we aimed to address these questions by presenting participants with both male and female models pictured in different attire (smart, casual) and postures (strong, neutral, weak), and asking them to form competency judgements on each (relating to confidence, professionalism, approachability, and likeliness of earning a high salary). A further level of smart attire (skirt suit and trouser suit) was considered for women, with casual clothing serving as a control for both men and women. This method allowed us to test the following experimental hypotheses:

Hypothesis 1: Posture manipulations will affect competence appraisal differently at different levels of clothing, with high power postures being more beneficial to individuals dressed casually than smartly.

Hypothesis 2: Interactions between posture and clothing will vary according to the gender of the model, with a greater variation in judgements of women across these factors.

Method

Participants

The sample comprised 106 adults (30 males, and 76 females, age $M = 29.15$, $SD = 14.82$), recruited from a social media website, and included a wide range of ethnic origins and occupations.

Design

Using a within-subjects design, photographs of models were viewed and rated by participants, with the models' *posture* (strong, neutral, weak) and *attire* (casual, smart) as the main independent variables. Additional variables considered the posture *position* (sitting, standing) and, for females in the smart condition, the *type of smart attire* (trouser, skirt).

Materials

Images of models were prepared by photographing four volunteers (two male, two female, with an age range 19-22) in all postures and positions at each level of attire, and (for females) attire type. The models adopted all of the poses in sequence and were each photographed separately. For the strong and weak postures, the models were instructed to adopt the same postures used in the experiment by Carney, et al (2010), both for sitting and standing positions, as these poses were known to elicit confidence in individuals. Thus, the strong poses were expansive (the models posed with open limbs), and the weak poses were not (the models posed with closed limbs). The strong and weak postures are depicted in Figures 1 and 2 respectively. Models also provided two neutral poses (one for sitting and one for standing) and were instructed simply to sit or stand in a way that was most natural or comfortable to them. These poses were not standardised, and thus varied by model, but still differed from the strong and weak poses (see Figure 3 for examples). Most of the photographs were taken with

the model facing in profile, but, as some poses required a table (the strong sitting and standing postures), these participants were photographed from an angle that captured most of their body.

All models were photographed in these six poses at the different levels of attire; casual and smart, in a unique order. For the casual attire, the models wore their own everyday, casual clothes and, for the smart attire, all participants wore a suit. The suits in all conditions were black (or dark grey, for one male) with a jacket and tie (for the males). To expand on attire type, females wore both trousers and a skirt with their suit in separate conditions. Therefore, there were two levels of attire for the males (casual, smart) and three for females (casual, smart-trouser, smart-skirt). This created 12 images for both of the male models, and 18 images for both of the female models, creating 60 images in total.

Models were informed that they were providing materials for an experiment but not provided with further details until the photographs were taken. To ensure that the posture manipulations altered how the models felt in each pose, they were instructed to provide ratings on how confident, comfortable and natural they felt while adopting each pose, each on a 7-point scale (e.g. 1 = *not at all confident*, to 7 = *extremely confident*). Each pose by each model was considered as an individual observation (n = 60) and the data comprised all four models across all levels of clothing. As expected, the models felt more confident when adopting a strong posture (M = 4.75, SD = 1.48) compared to a weak posture (M = 3.60, SD = 0.99), but felt most confident when adopting a neutral posture (M = 5.45, SD = 1.00). Similarly, models felt more comfortable when in a neutral posture (M = 5.80, SD = 0.83) compared to a strong (M = 3.70, SD = 1.81) or weak (M = 3.85, SD = 1.42) posture, and more natural in a neutral (M = 5.65, SD = 0.99) posture, compared to a strong (M = 3.35, SD = 1.75) or weak (M = 3.10, SD = 1.25) posture. When the data were submitted to three 2 (gender) x 3 (posture) between subjects ANOVAs, main effects of posture were confirmed for confidence; $F(2, 54) = 19.01$, $p < .001$, $\eta^2 = .413$, comfort; $F(2, 54) = 23.126$, $p < .001$, $\eta^2 = .461$, and naturalness; $F(2, 54) = 28.94$, $p < .001$, $\eta^2 = .517$. No main effects for gender were found for naturalness or comfort ($F < 3.5$, $p > .05$) but males

reported feeling significantly more confident (M = 5.33, SD = 1.43) than females (M = 4.11, SD = 1.14); $F(1, 54) = 21.88$, $p < .001$ $\eta^2 = 2.88$. There were no differences for any of the measures between the clothing manipulations for males ($t < .10$, $p > .10$) or females ($F < .10$, $p > .10$).

To ascertain what competence-based qualities of the models should be measured, a small focus group of six individuals (3 male, 3 female, aged 19-22) were presented with a random sample of the photos, and, for each, stated what attributes they would associate with the individuals in each image. This elicited descriptions such as 'confident', 'self-assured', 'professional', 'confrontational', 'approachable', and 'good job'. Due to some similarities between these descriptions and the measures used in a similar experiment by Howlett et al. (2013), the final measures selected for use in the final questionnaire were 'confident', 'professional', 'approachable', and 'high salary'. A principal component analysis confirmed these four measures loaded onto a single component (with no rotation necessary), accounting for 69.4% of the variance, with weightings ranging from .62 to .96. A Cronbach's alpha analysis confirmed high reliability between these measures (a = .80).

The photographs were resized and the models' faces blurred out ready to be included in an online questionnaire. The questionnaires were created using the website Qualtrics and each photograph was presented with four statements pertaining to the four competency measures underneath (confidence, professional, approachable, or high salary). For instance, the text stated *"The person in this photo is confident"* (for the confidence question) or *"The person in this photo earns a high salary"* (for the salary question) with an instruction to rate the extent to which participants agreed with these statements on a 7-point scale (1 = *strongly disagree*, to 7 = *strongly agree*). To reduce fatigue effects, the 60 images were split across four separate questionnaires, so participants would only rate 15 images in one questionnaire each. The 15 images in each questionnaire included six photographs of males and nine photographs of females across each level of clothing and postures. All questionnaires

comprised a variety of sitting and standing positions and all four models were present in each questionnaire. The presentation order of the images were randomised for each participant.

Procedure

A link to the experiment was disseminated both via a student course credit page and through social media. Upon selecting the link, an html script selected and loaded one of the four questionnaires at random. Participants gave consent to continue the experiment by clicking a 'begin' link, and were presented with the images individually (one per page) with the four rating scales below. Participants were encouraged to rely on their first impressions of the person in the image in forming their judgements, but no time limits were given. Once participants had rated all 15 images, they were asked to provide demographic information (age, gender) and were thanked for their participation.

Results

The primary data analyses focused on whether the posture and attire of models affected competency perceptions (confidence, trustworthiness, approachability, and likeliness of a high salary). Further tests examined differences in perception between the male and female models.

Manipulation checks

Participants who failed to complete the questionnaire in full were removed from the dataset, resulting in a final dataset consisting of responses from 86 individuals. Across all four questionnaires, participants rated males and females at every level of posture and attire, but with various models performing them in varying positions (sitting, standing). To rule out the possibility that the type of

model or posture position influenced the competency judgements, a series of manipulation checks were performed on the ratings of the images separately with each image as an observation (n = 60). Independent samples t-tests confirmed no significant differences in the confidence, professionalism, approachability, or salary ratings between the two male models ($t < 1.7$, $p > .10$), between the two female models ($t < .60$, $p > .50$), or between any of the models in the sitting and standing positions ($t < 1.2$, $p > .20$). Therefore, the data from the two male models and two female models were collapsed into 'male' and 'female' categories respectively, and the data were further collapsed such that every level of posture included both a sitting and standing position. The results from all four questionnaires were thus combined and considered as one complete dataset.

Clothing x posture

The main analysis focused on how the posture and clothing of the models affected competency judgements for both the male and female models. To examine this, the four competency-based measures (confidence, professionalism, approachability, and high salary) were analysed in two separate repeated measures MANOVAs (one for males and one for females) with posture and clothing as the within-subjects variables. For males, the clothing variable comprised two levels (casual, smart) and, for females, three (casual, smart-trouser, smart-skirt). The posture variable comprised three levels (strong, neutral and, weak poses) for both analyses. Figures 4 and 5 provide mean ratings of all competency-based measures across all levels of conditions for both males and females.

Insert Figures 4 and 5 about here

Multivariate tests were performed on the data in each MANOVA analysis with all competency measures combined. For males, the overall competency ratings were significantly higher when the models were pictured in a suit (M = 19.10, SD = 2.48) compared to casual clothing (M = 13.72, SD =

2.30); $F(4, 82) = 106.55$, $p < .001$, $\eta^2 = .84$. As expected, the models were rated higher in the stronger poses ($M = 16.94$, $SD = 2.54$) than the weaker poses ($M = 14.39$, $SD = 2.88$), but neutral poses were rated the highest ($M = 17.68$, $SD = 2.17$); $F(8, 336) = 30.30$, $p < .001$, $\eta^2 = .42$. Post hoc tests using the Bonferroni adjustment revealed that the neutral poses differed significantly from the weak poses on all measures, from strong poses on all measures except salary, and strong and weak differed on both confidence and salary (all at $p < .01$). An interaction effect was also present, with models receiving highest ratings for a neutral pose in the smart condition ($M = 21.08$, $SD = 3.34$) and highest ratings for a strong pose in the casual condition ($M = 14.72$, $SD = 3.15$); $F(8, 336) = 3.78$, $p < .001$, $\eta^2 = .08$.

For females, ratings were highest when the models were pictured in a skirt suit ($M = 20.28$, $SD = 2.71$), compared to a trouser suit ($M = 18.15$, $SD = 2.51$) or casual clothing ($M = 15.10$, $SD = 2.45$); $F(8,336) = 32.645$, $p < .001$, $\eta^2 = .44$. (Post hoc tests using the Bonferroni adjustment confirmed significant effects between casual and smart trouser, casual and smart skirt, smart trouser, and smart skirt on all measures, at $p < .01$.) As with males, ratings were also highest when the models were shown in a neutral pose ($M = 20.48$, $SD = 2.50$), compared to a strong ($M = 17.77$, $SD = 2.70$) or weak pose ($M = 15.05$, $SD = 2.58$), $F(8,336) = 91.14$, $p < .001$, $\eta^2 = .69$, and post hoc tests revealed significant effects between all levels on all measures ($p < .01$). The neutral pose was rated slightly higher than the other poses in the casual ($M = 17.22$, $SD = 3.55$) and smart trouser conditions ($M = 19.23$, $SD = 3.38$), but substantially higher in the skirt suit condition ($M = 25.18$, $SD = 3.29$). Thus, an interaction between clothing and posture was also present; $F(16,1360) = 7.38$, $p < .001$, $\eta^2 = 0.08$.

Univariate ratings for each of the four measures were then considered individually for both males and females by posture and attire, and descriptive statistics for these measures are provided in Table 1. For all competency measures (confidence, professionalism, approachability, and high salary), male models were rated most highly in the neutral pose when wearing smart clothing, but ratings were less

consistent and less dispersed with casual clothing. For females, ratings on all competency measures were highest when adopting a neutral pose, across all levels of clothing (with the exception of confidence which was only highest for the neutral pose in the skirt suit condition and the strong pose for the casual and smart trousers condition). For all competency measures, the magnitude of difference in ratings across the posture condition was considerably higher in the skirt suit condition. All main effects and interactions were significant for all measures, except for an interaction between posture and attire for confidence. The results of all main and interaction effects for both MANOVA analyses are summarised in Table 2.

Insert Tables 1 and 2 about here

Gender differences

To consider how the competency ratings varied between the male and female models, a further repeated measures MANOVA was conducted, with model gender (male, female), posture (strong, neutral, weak) and attire (casual, smart) as the variables. (For the females, the ratings for the smart-trouser and smart-skirt variables were averaged and collapsed into one overall 'smart' variable.) Main effects were again confirmed for clothing, $F(4,82) = 132.05$, $p < .001$, $\eta^{2} = .87$; posture, $F(8,78) = 78.28$, $p < .001$, $\eta^{2} = .89$; and an interaction between the two, $F(8,78) = 8.09$, $p < .001$, $\eta^{2} = .45$. Additionally, the female models overall received higher ratings ($M = 17.23$, $SD = 2.02$) than males ($M = 16.41$, $SD = 1.88$); $F(4,82) = 35.72$, $p < .001$, $\eta^{2} = .64$.

Interaction effects were present for gender x clothing. For smart clothing, the female models ($M = 19.23$, $SD = 2.28$) were judged slightly more favourably than males ($M = 19.10$, $SD = 2.48$) but, for the casual clothing, female models ($M = 15.10$, $SD = 2.45$) received notably higher ratings than the males ($M = 13.72$, $SD = 2.30$); $F(4, 82) = 8.26$, $p < .001$, $\eta^{2} = .29$. Interaction effects were noted for

gender x posture; females received higher ratings for strong postures (female M = 17.77, SD = 2.70; male M = 19.09, SD = 2.48) and weak postures (female M = 15.05, SD = 2.57; male M = 14.39, SD = 2.88), and considerably more for neutral postures (female M = 20.48, SD = 2.50; male M = 17.68, SD = 2.19); $F(8,78) = 5.04$, $p < .001$, $\eta^2 = .34$. No interaction was found for gender x posture x clothing, $F(8,78) = 1.76$, $p = .097$, $\eta^2 = .15$. These results confirm that the clothing and posture manipulations affected perceptions of the male and female similarly, but that females generally obtained higher ratings than males.

To examine differences in how gender and clothing interacted, two separate MANOVAs were conducted to compare competency ratings of the male and female at the level of smart clothing only. In the first, the female smart data comprised of the 'smart trouser' data and, in the second, the 'smart skirt' data. Thus, females were compared against males on all competency measures with both a trouser suit and a skirt suit.

Mean scores for males were calculated for confidence (M = 5.13, SD = 0.82), professionalism (M = 4.95, SD = 0.85), approachability (M = 4.22, SD = 0.92), and high salary (M = 4.80, SD = 0.82). When wearing a trouser suit, female models were perceived as less confident (M = 4.49, SD = 0.91), less professional (M = 4.80, SD = 4.94), less likely to earn a high salary (M = 4.55, SD = .80), but slightly more approachable (M = 4.30, SD = 1.02) than males. Univariate measures revealed significant effects for confidence; $F(1, 95) = 51.47$, $p < .001$, $\eta^2 = .35$, and salary; $F(1, 95) = 8.23$, $p = .005$, $\eta^2 = .08$, but not professionalism; $F(1, 95) = 2.18$, $p = .143$, $\eta^2 = .02$, or approachability; $F(1,95) = 1.57$, $p = .213$, $\eta^2 = .02$. However, a multivariate analysis confirmed an overall effect for gender; $F(4, 92) = 17.28$, $p < .001$, $\eta^2 = .43$. In contrast, when wearing a skirt suit, the female models were perceived as being more professional (M = 5.36, SD = 1.02) more approachable (M = 4.82, SD = .89), more likely to earn a high salary (M = 5.02, SD = .81), but slightly less confident (M = 5.09, SD = .89) than the males. Univariate measures revealed significant effects for professionalism; $F(1, 96) = 8.81$,

p = .004, η^2 = .08, approachability; $F(1,96) = 20.74$, $p < .001$, η^2 =. 18, and salary; $F(1,96) = 2.97$, p = .006, η^2 = .08, but not confidence; $F(1, 96) = 0.54$, p = .46., $\eta^2 < .01$. A multivariate analysis confirmed an overall gender effect; $F(4, 93) = 8.70$, $p < .001$, $\eta^2 = .27$. These results suggest that the higher competency ratings afforded to women can largely be attributed to the high ratings given in the skirt suit condition.

In summary, the type of posture affected the ratings participants gave to the models, with stronger poses receiving higher ratings than the weak poses, but the neutral poses scoring highest overall. Similarly, the type of attire affected the ratings on all measures, with those in smart clothing receiving higher ratings than those in casual clothing and, for women, higher ratings when wearing a skirt suit compared to a trouser suit. Interactions between posture and clothing were found but differed between men and women. Men were judged more favourably in a strong pose with casual clothing and a neutral pose in smart clothing, whilst women were judged more favourably in a neutral pose in all clothing, but considerably more in a skirt suit.

Discussion

In our study, we confirm the results of previous research which state that competency ratings of individuals vary by their posture (Hall et al., 2005; Murphy et al., 2003; Weisfeld & Beresford, 1982) and their attire (Behling & Williams, 1991; Dacy & Brodsky, 1992). However, we move forward research in this area by demonstrating the relative importance of each of these factors in forming competency judgements of others. We confirmed an interaction effect of posture and clothing across our sample by showing that perceptions of people in different attire can be altered by the posture they adopt while wearing it. As expected, the positive perceptions of individuals in smart clothing were not magnified by a strong posture, but instead by a neutral posture. The effects of posture also varied by clothing; they were more salient when individuals were pictured in smart clothing.

Previous research has shown that high power poses can elicit greater perceptions of power than low power poses (Hall et al, 2005). In this study, we introduced neutral poses and found that these most often generated higher competency ratings and were more closely aligned with the strong poses than the weak ones. This is consistent with findings that individuals in high power positions adopt strong poses naturally (Leffler et al., 1982; Carney et al., 2005), and brings into question whether the differences in posture conditions can be attributed mainly to the beneficial effects of strong poses or the detrimental effect of weak poses. If the latter, encouraging individuals to adopt power poses voluntarily may not be best practice and, to maximise perceptions of competency, individuals should instead be encouraged to simply sit or stand in a way that is most comfortable or natural to them.

Previous research has identified that perceptions of individuals in smart clothing can vary when their status is made explicit by their role (Howlett et al., 2015), but here we show that their posture is also enough to convey their status and can subsequently impact upon perceptions in different clothing. This is an important finding as there is some inconsistency between posture and roles in determining status and power; those in high roles may not necessarily adopt strong postures, and the effects of posture can overrule the effects of role in making individuals feel more powerful (Huang et al., 2010). Given that individuals naturally infer a strong status from a person's posture, these findings together suggest that an individual's posture can help or hinder the way they are perceived by others across different clothing types.

Gender differences

Another key finding of our study was that the relative importance of posture and clothing differed for men and women. We confirm that interactions are present between gender and posture (Aries et al., 1983; Schwartz et al., 1982) and gender and clothing (Morris et al., 1996) but build on these findings to show that interactions between posture and clothing also vary by gender. Specifically, we found

that, for men, strong poses were rated highest in casual clothing, and neutral poses in smart clothing. For women, neutral poses were always rated highest, but the difference in competency ratings was magnified when wearing smart clothing (specifically, a skirt suit).

When wearing casual clothes, we found that the female models were judged more favourably than the males; a result consistent with the findings of Morris et al (1996). When wearing a suit however, the results were more varied: Female models were found to receive lower competency judgements than the males when the suit was a trouser suit, but higher competency judgements when it was a skirt suit. These findings may appear to be in conflict with previous literature stating that women are viewed more favourably when dressed in a masculine style (Forsythe, 1990) and when dressed in trousers as opposed to a (provocative) dress (Cahoon & Edmonds, 1989). However, judgements have been found to vary by the provocativeness of the clothing, with women receiving more favourable judgements when their feminine attire (skirt and blouse) are not revealing compared to when they are (Abbey, Cozzarelli, McLaughlin, & Harnish, 1987; Howlett et al., 2015; Wookey, Graves, & Butler, 2009). In our experimental manipulation, we offered a compromise between these dress styles by comparing a feminine (but not revealing) skirt suit with a more masculine trouser suit. Our study was the first to make this manipulation and confirmed that the former was rated higher than the latter. Consequently, we suggest that the benefits of women dressing in a masculine style only extend to the point of wearing a suit, but a more feminine, though not revealing suit results in more favourable judgements.

Due to gender stereotypes and expectations, women may face more challenges when managing their appearance in the workplace. Women are seen as less suited to leadership roles due to a perceived incongruence between leadership and feminine qualities (Eagly & Karau, 2002) and, when women do exert leadership qualities, they are often criticised for lacking feminine qualities (Biernat, Tocci, & Williams, 2012). Males may be more suited to exhibiting power through posture (Aries et al., 1983; Schwartz et al., 1982) and research has tended to focus more on the benefits of power posing for men

than women (Schubert & Koole, 2009; Carney et al, 2010). In our experiment, we confirmed that, while strong power poses were sometimes beneficial for men, they resulted in consistently lower competency ratings than neutral poses for women across all levels of clothing. Managing competence through posture may therefore not be best practice for women, and clothing may yield greater benefits. While clothing manipulations for women can be quite sensitive (Griffiths, 2006; Howlett et al., 2015), a skirt suit provides a means of exhibiting leadership while maintaining feminine qualities and should therefore serve to resolve the perceived incompatibility between leadership and femininity (Eagly & Karau, 2002; Biernat, Tocci, & Williams, 2012). In this study we confirmed that, when women were matched to men for smart clothing (by wearing a trouser suit), they received lower competency ratings overall, but significantly higher ratings when wearing a skirt suit. Future studies should examine whether clothing may serve as a mechanism to reduce this prejudice.

Overall, the method used in this study was robust. The within-subjects nature of the stimuli presentation allowed for a strong statistical analysis, ensuring comparisons could be made across models and that competency ratings would not be contaminated by models' individual differences. Dividing the stimuli into four questionnaires also ensured that participants had limited exposure to each of the models, thus reducing reactivity to previous stimuli. However, a limitation of this study is that only four models were used for the stimuli and, to increase the reliability and generalisibility of these findings, future research could consider whether these effects hold for a greater range of models. It would also be worthwhile to consider the relationship between the models' and participants' ratings of confidence to ascertain whether the intrapersonal effects of clothing and posture manipulations translate to interpersonal effects across all conditions.

In this experiment, we considered two different levels of smart clothing for women (a trouser and skirt suit), with the casual condition serving as a control. However, future researchers may wish to manipulate attire type across various clothing styles (both smart and casual). Previous research has

shown that the judgements people receive differ according to how much skin they reveal through their clothing choices, both for men and women (Abbey et al., 1987) but it is unclear at present whether the positive judgements afforded to women when wearing a (non-revealing) skirt extend to casual clothing too. Our research opens the door to new research that explores whether attire and attire type influence competence judgements independently or interactively.

In summary, we report new insight into the importance of both clothing and posture when forming impressions of others and how their relative importance varies by gender. These results have important implications for how one manages their profile in the workplace and beyond. We report that both men and women benefit from dressing smartly (for women, skirt suits in particular) and adopting a neutral posture when doing so. Given that the effects of posture manipulation vary by clothing style and that high power poses can not offset the lower ratings associated with casual clothes, we show that dressing smartly is a more reliable way of manipulating competency ratings. By considering interactions between these variables, we provide new insights into how both men and women are perceived in different postures and clothing, and open the door to new research investigating how the intrapersonal effects of posture and clothing relate to impression formation.

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Figure 4: Total competency ratings at each level of posture and clothing for males.

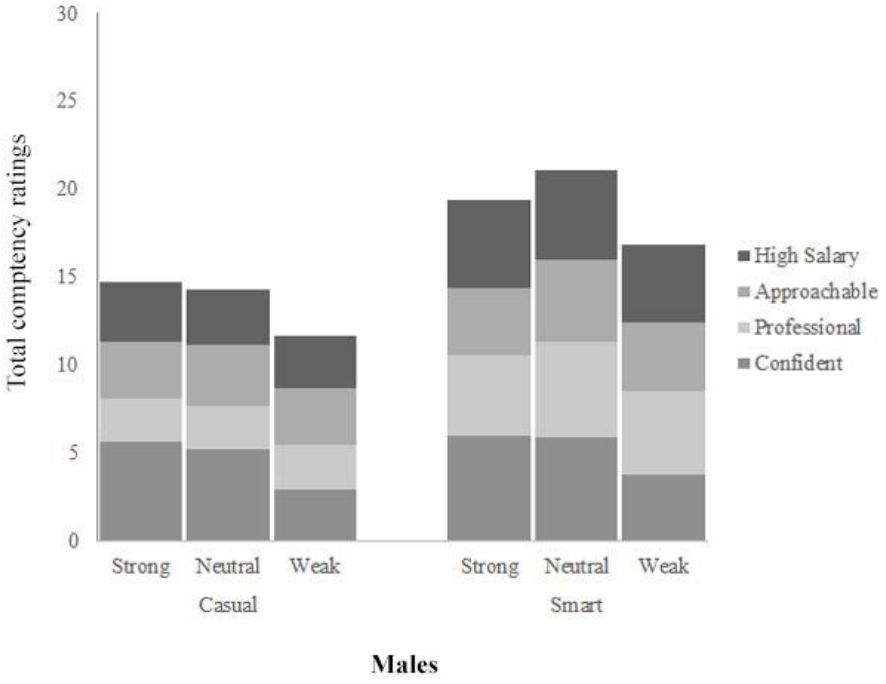

Figure 5: Total competency ratings at each level of posture and clothing for females.

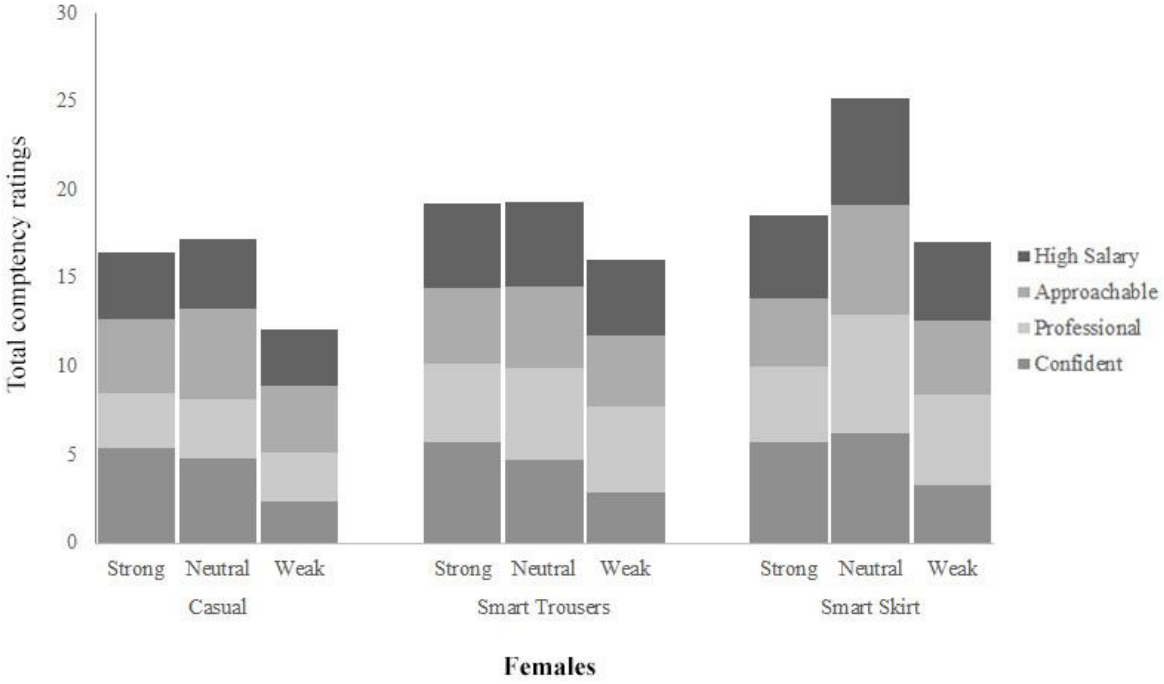

Table 1: Univariate descriptive statistics for the two MANOVA analyses

		Male		**Female**		
		Casual	Smart	Casual	Smart Trouser	Smart Skirt
		M *(SD)*	M *(SD)*	M *(SD)*	M *(SD)*	M *(SD)*
Confidence	Strong	6.64 *(1.21)*	5.93 *(0.78)*	5.43 *(1.16)*	5.72 *(1.00)*	5.76 *(1.14)*
	Neutral	5.15 *(1.18)*	5.98 *(1.09)*	4.83 *(1.34)*	4.69 *(1.55)*	6.24 *(1.40)*
	Weak	2.93 *(1.54)*	3.72 *(1.83)*	2.40 *(1.04)*	2.86 *(1.36)*	3.29 *(1.75)*
Professionalism	Strong	2.44 *(1.08)*	4.59 *(1.45)*	3.03 *(1.15)*	4.48 *(1.52)*	4.24 *(1.73)*
	Neutral	2.47 *(0.95)*	5.48 *(0.99)*	3.30 *(1.27)*	5.21 *(1.15)*	6.73 *(0.93)*
	Weak	2.48 *(1.08)*	4.78 *(1.33)*	2.73 *(1.09)*	4.90 *(1.18)*	5.09 *(1.35)*
Approachability	Strong	3.20 *(1.45)*	3.84 *(1.37)*	4.26 *(1.29)*	4.26 *(1.46)*	3.83 *(1.50)*
	Neutral	3.50 *(1.39)*	4.71 *(1.31)*	5.13 *(1.19)*	4.64 *(1.35)*	6.20 *(1.13)*
	Weak	3.23 *(1.39)*	3.94 *(1.51)*	3.80 *(1.46)*	4.04 *(1.54)*	4.23 *(1.53)*
High Salary	Strong	3.44 *(1.13)*	4.98 *(1.03)*	3.76 *(0.96)*	4.78 *(1.03)*	4.74 *(1.24)*
	Neutral	3.20 *(1.13)*	5.07 *(1.16)*	3.95 *(1.04)*	4.80 *(1.12)*	6.01 *(1.11)*
	Weak	3.02 *(1.15)*	4.36 *(1.20)*	3.20 *(1.04)*	4.23 *(1.13)*	4.42 *(1.12)*

Table 2: Univariate results for the two MANOVA analyses.

		Males				**Females**			
		df	F	p	n	df	F	p	n
Confidence	Clothing	1, 85	37.07	.000	0.30	2, 170	35.44	0.000	0.30
	Posture	2, 170	175.46	.000	0.67	2, 170	351.42	0.000	0.81
	Clothing * Posture	2, 170	1.67	.191	0.02	4, 340	8.266	0.000	0.09
Professional	Clothing	1, 85	433.65	.000	0.84	2, 170	187.50	0.000	0.69
	Posture	2, 170	8.23	.000	0.09	2, 170	79.42	0.000	0.48
	Clothing * Posture	2, 170	9.27	.000	0.10	4, 340	21.58	0.000	0.20
Approachable	Clothing	1, 85	48.26	.000	0.36	2. 170	7.91	0.001	0.09
	Posture	2, 170	8.07	.000	0.09	2, 170	69.05	0.000	0.45
	Clothing * Posture	2, 170	3.42	.035	0.04	4, 340	15.55	0.000	0.15
Salary	Clothing	1, 85	130.75	.000	0.61	2, 170	101.77	0.000	0.55
	Posture	2, 170	14.48	.000	0.15	2, 170	55.84	0.000	0.40
	Clothing * Posture	2, 170	3.29	.040	0.04	4, 340	12.45	0.000	0.13