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Competent and Warm but Unemotional: The Influence of Occupational Stereotypes on the Attribution of Emotions

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Abstract The present research aims to assess how occupational stereotypes, and in particular, stereotypes about doctors, influence the observers' perception of the emotions expressed by members of this group. For this, 60 men and women judged the emotions of women who expressed either happiness, anger, sadness, or a neutral expression and whose faces were either uncovered or covered with a surgical mask, a niqab, or a hat and scarf such that only an identical portion of the face around the eyes was visible. Congruent with the occupational stereotype, women dressed as doctors were perceived highest on competence and warmth, but also as emotionally restrained such that they were rated as experiencing lower levels of emotions relative to the same women wearing other face covers or with uncovered faces.

Keywords Occupational stereotypes · Facial expressions · Emotion perception

Introduction

People hold different views about the characteristics of individuals occupying different jobs, for example, a construction worker is perceived as strong and rugged and a magazine journalist as a good communicator (Glick et al. 1995). The present research aims to assess how the stereotypes we hold about occupational groups, in our case, doctors, influence the observers' perception of the emotions expressed by members of this group.

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In fact, emotional facial expressions are not always perceived as intended. Whereas prototypical emotion expressions, such as those from the pictures of facial affect (Ekman and Friesen 1976), are generally well recognized by adults across cultures (Ekman et al. 1987; Elfenbein and Ambady 2002), the more ambiguous, weaker expressions of everyday life are much harder to decode (Motley and Camden 1988). Furthermore, even when observers are faced with prototypical emotion expressions, their perception may be biased by additional cues provided by the context, such as body postures (Aviezer et al. 2008). Hence, other sources of information about the likely emotions of the sender, over and above what the face provides, may become relevant for emotion identification (Karniol 1990; Kirouac and Hess 1999). Thus, in any situation where a full prototypical emotion expression is not available, such information may be of specific usefulness to the observer. One such source of information are the stereotypes, including the occupational stereotypes, we hold about members of different social groups. That occupational stereotypes play an important role in person perception, specifically in the attribution of traits to individuals is well established (e.g., Feldman 1972). Yet, little is known about their influence on emotion perception. Before describing the research in more detail, we will first discuss how emotions are perceived and the role of stereotypes in that process.

Two Strategies for the Recognition of Emotions

There are two principal strategies for the decoding of emotion displays (Kirouac and Hess 1999). First, pattern matching can be used to draw inferences regarding an expresser's presumed emotional state using a strategy where specific features of the expression are associated with specific emotions (Buck 1984). Thus, upturned corners of the mouth or lowered brows are recognized as smiles or frowns and a perceiver can thus conclude that the individual is happy or angry respectively. However, this strategy works best when clear full face expressions are shown, in which the relevant patterns can be well discerned.

The second decoding strategy depends upon the knowledge that the perceiver possesses regarding the sender and/or the social situation in which the interaction is taking place. This information permits the perceiver to infer the emotional state that the sender is most likely experiencing. Yet, when individuating knowledge about a person is not available, stereotype knowledge can be employed.

For example, when hearing that an individual's car had been vandalized, participants predicted that a man would show anger but a woman sadness (Hess et al. 2005), reacting to a common stereotype about women's emotional reactions to adversity (Hess et al. 2000). Such stereotypes then bias emotion recognition such that the same facial expression by a man and a woman will be rated as expressing different levels of underlying affect based on the normative stereotypical expectations of the observers (Hess et al. 2000, 2004; Kirouac and Hess 1999). In a similar vein, Black men are expected to be more aggressive than White men, and observers are correspondingly more likely to attribute anger to them (Hugenberg and Bodenhausen 2003).

Yet, the specific stereotypes that describe Black men as aggressive or women as likely to react to adversity with sadness rather than anger, directly refer to their emotional lives. That is, part of the stereotype content is specific to emotions. By contrast, occupational stereotypes consist of a conglomerate of traits, which are attributed to the person, not all of which relate directly to emotions. Thus, the doctor stereotype does not contain a clear association of doctor with one specific emotion such as aggression or sadness (Bogart et al. 2004). Hence, the question is whether an occupational stereotype still has the power to influence emotion perception.

Occupational Stereotypes

For the present research we chose the occupation of medical doctor. One well-established framework for the understanding of stereotypes about different social groups is the Stereotype Content Model by Fiske and colleagues (SCM, Cuddy et al. 2007, 2008; Fiske et al. 2002). This model divides social perception into two dimensions: warmth and competence. In general, groups that do not compete for in-group resources are perceived as warm and high status groups as competent.

In the framework of the stereotype content model (SCM, Fiske et al. 2002, 2007) doctors fit into the category of high competence, cooperative groups (Demoulin and Teixeira 2010), which suggests that doctors are perceived as competent and warm. The latter attribute seems to stem from the fact that doctors are in a helping profession. Perceptions of warmth are highly correlated with perceptions of emotionality (Hareli and Hess 2010), thus, one could expect doctors' emotions to be perceived as relatively intense. Yet, at the same time, doctors are also expected to keep a certain distance from the suffering of their patients so as to keep objective. Indeed, there is evidence that medical students in the course of their studies become less empathic (Barber et al. 2008) and doctors are also perceived as relatively unemotional (Kaler et al. 1989). More specifically, recently it has been argued that restrained emotion displays are suggestive of mastery of one's life and of competence in general (Warner and Shields 2007). Hence, we would expect the occupational stereotype for doctors to lead overall to a reduction in perceived emotional expressivity in line with the assumption, that a doctor needs to keep emotional distance.

By showing an individual wearing a surgical mask and cap, we were able to both signal the person's occupation and to reduce the clarity of the expressions, making it more likely that pattern matching would not be sufficient for emotion recognition. Research using the *Reading the Mind in the Eyes Test* (Baron-Cohen et al. 1997a, b) shows that normal children and adults can deduce various mental states from the information contained in the eye region alone. Besides, most basic emotions have diagnostic information in the eye region (e.g., wide open eyes in fear, eyebrows drawn down and together in anger, cheeks pushed up in happiness, Boucher and Ekman 1975). Thus, the task should be difficult but not impossible.

Yet, it is possible that covering the face does not only reduce the signal clarity of the emotional stimulus, but leads to a general reduction in perceived emotionality compared to the more familiar and information rich full face view. To control for this possibility, we added two types of comparisons. First, uncovered full face expressions as a direct comparison, and second, a neutral non-occupational face cover (winter hat and scarf), which should reflect effects of covering the face, but not be associated with an emotion stereotype consistent with reduced emotionality.

Further, it has recently been suggested that covering the face should lead to a negativity bias, such that more negative emotions are perceived in faces that are covered, especially when covered with a niqab (Fischer et al. 2012). Hence, we added a niqab as well. Only female expressers were included, to avoid confounding the results with additional gender stereotypes, which may interact with occupational stereotypes.

In order to assess whether occupational stereotypes impact on the intensity of perceived emotion expressions or bias the perception of the emotion in line with the negativity bias described by Fischer et al. (2012) we first assessed the level of the target emotion rating. The target emotion rating is defined as the rating on the emotion scale that corresponds to the emotion that the expressions had been validated to show. Thus, for an angry face, the level of intensity with which the face was correctly rated as angry corresponds to the target

emotion rating. If doctors are perceived as less emotional they should receive lower ratings on this measure.

To assess whether stereotype knowledge leads observers to impute additional emotions—not shown by the expresser—we followed Hess et al. (2012) by further analyzing the non-target ratings. Non-target ratings correspond to the mean ratings over all emotion scales, except the target emotion scale.

Specifically, observers tend to see multiple emotions even when judging emotional expressions considered to be “pure” (Russell and Fehr 1987; Russell et al. 1993; Yrizarry et al. 1998). This is especially the case in naturally occurring social interactions where people are likely to exhibit subtle expressions that are open to different interpretations (Mahaffey et al. 2005; Motley and Camden 1988) or where other cues suggest the expression of different emotions (Aviezer et al. 2008). But this may also be the result of “projecting” emotions to a person when expressions are ambiguous and stereotypes are applied to reconstruct the likely emotion the person may have shown. Thus, if in line with Fischer et al. (2012) covered faces are always perceived as showing more negative emotions, we would expect higher ratings on the non-target emotions for all covered faces compared to the uncovered face. For example, if an angry expression is rated also as sad and fearful then this would be reflected in the non-target ratings. If there is a negativity bias for the niqab only, then non-target ratings should only be high for women wearing a niqab, but not for the doctor or the control individual wearing a hat and scarf. To assure that doctors are indeed perceived as warmer and more competent than the members of the other social groups, we assessed the perceived competence and warmth for each individual. Our hypotheses are summarized below.

Hypotheses

H1 Women dressed as doctors will be rated highest in both competence and warmth compared to all other groups.

H2 Women dressed as doctors will be rated lowest on both target and non-target emotion, reflecting overall less perceived emotionality compared to all other groups.

H3 Based on Cuddy et al. (2008), women wearing a niqab should be rated as lowest in warmth and competence compared to all other groups.

H4 Following Fischer et al. (2012), women wearing a niqab should be rated highest on non-target emotions compared to all other groups as observers impute more negative emotions to all her expressions. This, because, as mentioned above, the additional attribution of negative emotions should be reflected in additional ratings of negative emotions as captured by the non-target emotion measure.

Method

Participants

A total of 60 (33 men and 27 women) graduate students from the Graduate School of Management at the University of Haifa with a mean age of 28.5 years ($SD = 9.0$) participated in groups of up to 10.



Fig. 1 Example of the photos used in the study

Stimuli

Facial expressions of happiness, anger, sadness as well as a neutral expression from the four female models of the MSFDE (Montreal Set of Facial Displays of Emotion, Beaupré and Hess 2005) were used. A professional design artist covered the face with a surgical mask and cap, a niqab, or a hat and scarf such that only an identical portion of the face around the eyes was visible (see Fig. 1). This resulted in a total of 4 (models) \times 4 (emotions) \times 4 (type of cover) = 64 photos. Each participant rated 4 photos in a modified Latin square design with the restriction that neither the same model nor the same cover nor the same expression was shown twice. The neutral expressions were used to assess the effect of the occupational stereotype on personality ratings.

Procedure and Dependent Variables

Participants who gave informed consent received a booklet with the stimuli as well as answer sheets. The participants' task was to rate all stimuli on (a) the emotions the stimulus person felt using the scales anger, sadness, happiness, fear, and contempt and (b) personality characteristics of the stimulus person (violent, mature, reliable, dominant, social, and able).¹ These items were combined into two scales reflecting competence on one hand (dominant, able, mature, $\alpha = .62$) and warmth on the other (social, violent (reverse scored), reliable, $\alpha = .68$).

¹ In addition, we asked whether the expressions were perceived as justified and authentic to check on the quality of the manipulation. There were no significant differences between covers on these variables.

All ratings were made on 7-point scales anchored with 0—*not at all* and 6—*to a large extent*. The rating on the scale corresponding to the emotion shown by the stimulus person (i.e., anger for a character showing an angry expression) was considered the target emotion. The mean of the ratings on all other emotion scales (representing emotions not shown by the stimulus) represented the level of perceived non-target emotions.

Results

Initial analyses including sex of participant were conducted on all dependent measures. No main effects or interactions emerged and this factor was therefore dropped from the analyses. The personality ratings for the expressers when showing a neutral expression were employed to verify the influence of stereotypes on person perception. An ANOVA with the factor cover revealed a significant main effect of cover for warmth, $F(3, 56) = 5.23, p = .003, \eta_p^2 = .22$ and competence $F(3, 56) = 7.15, p < .001, \eta_p^2 = .28$. As predicted, post hoc analyses (Fischer's LSD) revealed that the same women when dressed as a doctor were rated as significantly ($p < .05$) more warm and competent, than when dressed with any other cover or no cover; between these three groups emerged no significant difference (see Table 1). Since in all cases the same women were shown, participants' trait attributions to the expressers was biased in a stereotype congruent way as a function of face cover. Thus, stereotypes were applied to the ratings of the individual as a function of their assigned group membership.

To assess the prediction that participants also used occupational stereotypes to interpret the expressers' emotional feelings based on their expressions, we analyzed the intensity of the target emotion and non-target emotion ratings across all emotions. We further calculated a sum score to assess the overall perceived emotionality of the expresser.

For the target emotion ratings across all three emotions, a main effect of cover emerged, $F(3, 176) = 5.96, p = .001, \eta_p^2 = .09$. As predicted (see Table 2), post hoc tests (LSD, $p < .05$) revealed that when wearing a surgical mask, the women were rated as feeling the target emotions to a significantly lesser degree, than when wearing no cover or a niqab, but with no significant difference to the hat and scarf. Conversely, in the full face the target emotion was rated more intensely, yet with no significant difference to the niqab condition. For the non-target emotion ratings, a main effect of cover also emerged, $F(3, 176) = 4.77, p = .003, \eta_p^2 = .08$. In line with our predictions (see Table 2), post hoc tests (LSD, $p < .05$) revealed that participants attributed significantly more non-target emotions to women wearing a niqab but also to the woman wearing a hat and scarf, than when the same women wore a surgical mask, or no cover.²

To verify the notion that women identified as doctors were rated as showing overall less emotion than the other women, we calculated the sum score of the intensity of the target and the non-target emotions (see Table 2). A main effect of cover emerged, $F(3, 176) = 6.76, p < .001, \eta_p^2 = .10$. As predicted, the women were rated as significantly less emotional when wearing a surgical mask than any other group. No differences emerged between the other three conditions. It is interesting to note that the more information rich full face and the women wearing a niqab were rated similar in terms of total emotion shown. However, in the latter case, the higher emotion ratings are due essentially to more non-target emotion ratings for the women wearing a niqab.

² Separate analysis of the negative and positive target emotions, revealed the same pattern of effects as the combined analysis.

Table 1 Means and standard deviations for ratings of warmth and competence as a function of face cover

	Doctor		Niqab		Scarf/hat		Full face	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Warmth	4.51 ^a	.93	3.49 ^b	.78	3.71 ^b	1.37	3.07 ^b	.91
Competence	4.20 ^a	.80	2.76 ^b	.79	2.84 ^b	.65	3.07 ^b	1.43

Note. values sharing the same superscript are not significantly different

Table 2 Means and standard deviations for emotion perception ratings as a function of face cover

	Doctor		Niqab		Scarf/hat		Full face	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Target emotion	3.69 ^{ac}	1.99	4.58 ^{bc}	1.45	4.09 ^{abc}	1.83	5.02 ^b	.87
Non-target emotion	1.49 ^{ad}	1.06	2.37 ^{bc}	1.25	2.04 ^{bcd}	1.27	1.73 ^{acd}	1.11
Sum score	5.18 ^a	2.42	6.95 ^{bc}	2.01	6.13 ^c	2.28	6.75 ^{bc}	1.36

Note. values sharing the same superscript are not significantly different

Discussion

The goal of the present study was to assess whether the occupational stereotype which describes doctors as competent and warm (Demoulin and Teixeira 2010), but also as unemotional (Kaler et al. 1989) would be reflected in the ratings of the same women when wearing a surgical mask versus another type of face cover. Two types of control covers were considered: a neutral one consisting of a hat and scarf such as worn on a cold winter day, and one for which the impact of stereotypes had previously been demonstrated—a niqab (Fischer et al. 2012). We assumed that stereotype effects would be evident in covered faces, as such faces provide less emotion information and therefore allow more easily for the attribution of stereotype based emotions than full face prototype expressions.

In this vein, we found that participants rated the target emotion more intensely and non-target emotion less intensely when the full face was shown. Since the full-face expression must be less ambiguous and clearer as it provides maximal information, any reduction in clarity due to the reduction in information because of the face cover, should lead to lower ratings of target emotions and higher ratings of non-target emotions compared to the full face. As this was indeed the case, the face cover did in fact reduce the clarity of the emotional signal. However, this difference is small (see Table 2), supporting the notion that information from the eye region alone suffices to recognize basic emotions.

We predicted (H1) and found that the women when dressed as a doctor should be rated as warm and competent. This finding supports previous research based on the SCM. Yet, we also predicted, that doctors should be perceived as emotionally restrained. This restraint would reflect itself in a stereotype view of doctors expressing less intense emotions overall (H2). This was indeed what we found. The sum scores were lowest for the women when dressed as a doctor, which reflects the low ratings on both the target and non-target emotion scales. As in all cases, the same women with the same emotion expression were shown, these findings suggest that the occupational information alone drove this perception.

Contrary to our predictions, which were based on previously reported findings from a nationally representative sample from the United States (Cuddy et al. 2008), women

wearing a niqab were not rated as lower in competence and warmth than the white woman in the full face condition which in appearance could be compared to the social group of middle class Americans included by Cuddy et al. (2008). This suggests a more positive view of Muslim women in the Israeli context, where participants are in regular contact with this social group as well as with non-Muslim women with covered faces (e.g., Druze women and some extreme orthodox Jewish women).

This finding also suggests that the higher level of non-target emotions for expressions shown by women wearing a niqab (H4), compared to the other three groups, were not related to an overall negative stereotype but reveal a specific emotion stereotype, which resulted in the imputation of additional emotions. As such, women who wear a niqab were rated as overall most emotional (see Table 2). As the separate analysis of the positive and negative non-target emotions revealed the same results as the analysis of the combined measure, the higher emotionality of the women wearing a niqab is based on both, more negative and more positive, non-target emotions. Also, neither the hat and scarf nor the niqab conditions differ from the full face condition, in ratings of target or non-target emotions. Thus, overall our findings do not support the notion that simply covering the face entrains a negativity bias as suggested by Fischer et al. (2012). However, Fischer et al. (2012) conducted their study in the Netherlands and the difference in findings may be due to a culture specific reaction to covering the face.

Limitations and Future Research

The present study used a surgical mask to depict a doctor. Whereas any doctor may wear a surgical mask and cap while performing different medical procedures requiring sterile conditions such as treating wounds or when attempting to avoid contamination, such a mask and cap may be more readily associated with a surgeon. Surgeons seem to be characterized by somewhat different traits than other doctors among medical students who have an extensive experience with various doctors (Harris 1981). Nevertheless, we failed to find any evidence that such differences in perceptions are shared by people more generally. In fact, studies testing doctor stereotypes in the larger population focus on doctors as a general category and not on specific specializations (e.g., Bogart et al. 2004). However, our findings hint that the doctors in our study were seen rather positively at least in terms of warmth. This matches the way doctors were perceived in other studies (Bogart et al. 2004). Hence, even if the doctors in our study were seen to be surgeons, at least in terms of being perceived as warm and competent they seem the same as doctors more generally (Bogart et al. 2004).

Relatedly, while general medicine does not seem to be associated with a certain gender, a surgeon is perceived to be a male's occupation (Couch and Sigler 2001). In this study we focused on female expressers only. This was done to reduce the potentially complex interplay of gender-stereotypes with occupational and other social group stereotypes as this was a first attempt to experimentally study the perceptive biases that occupational stereotypes may engender when people judge the emotions of others. It will be important to examine in the future perceptions of male doctors to assess the extent to which our findings generalize across genders. Overall, taken together, future research may want to consider other types of doctors and occupations more generally as well as the interaction between gender stereotypes and occupational stereotypes. Thus, women are usually expected to be more expressive of affiliative emotions and less expressive of antagonistic emotions, whereas the reverse is true for men. This effect is largely driven by the differences between

men and women in perceived dominance (Hess et al. 2005). Hence it is possible that female doctors are perceived as more emotionally expressive than male doctors. At the same time, doctors are perceived as high in competence, which is closely correlated with dominance, and hence this may reduce the relative impact of the gender stereotype. Ethnic group stereotypes also may interact in various ways with occupational stereotypes as is already hinted at by our findings regarding the effect of the niqab.

Despite the limitations mentioned above, the present research shows that doctors are perceived as warm and competent on one hand, and as emotionally restrained on the other. Thus, even though the perception of warmth could have entrained an expectation of high emotionality, participants based their ratings on the competence aspect of occupational stereotype instead, which demands emotional restraint. This suggests that occupational stereotypes have a very strong and complex effect on perceptions and may therefore have effects even in the more information rich context of an actual interaction. Importantly, the present research is the first to indicate the possibility that a complex stereotype composed of two elements, which may lead to different expectations, specifically warmth, which leads to the expectation of more emotionality, and competence, which leads to the expectation of more emotional restraint. This extends previous research which has focused just on one aspect, for example job status, when studying the impact of occupational context on emotion perception (e.g., Algoe et al. 2000).

Yet, doctors who are emphatic and smile to their patients are more positively perceived by their patients (Jangland et al. 2009; Lill and Wilkinson 2005; Luthy et al. 2005). The present research suggests that the occupational stereotype that people hold regarding doctors may make them appear less emotionally reactive—a fact that may impinge on the extent to which they seem empathic in their patient's view.

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