

Stereotyping and action tendencies attribution as a function of available emotional information

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Abstract

In three experiments, we addressed the role of stereotypes in the attribution of action tendencies in intergroup contexts. We hypothesized that stereotyping would affect the attribution of action tendencies to out-group members. Participants were presented with a facial expression displayed by either an in-group or an out-group member, followed by the presentation of a label describing an action tendency. They were then asked whether the label corresponded to the feeling state of the expresser. Study 1 tested whether stereotypes influence the attribution of action tendencies to out-group members. Study 2 tested whether stereotype application varies as a function of the emotional information contained in the facial stimuli (i.e. neutral vs. emotional). Finally, Study 3 tested whether stereotype activation is indirectly determined by a difference in morphology between in-group and out-group members or directly determined by the expresser's group membership. As predicted, an increase in attribution of stereotypic action tendencies was observed for out-group expressers. The application of stereotypes was specifically observed when facial expressions were neutral as compared to emotional and was independent of morphological differences between in-group and out-group faces. Such biases in interpreting out-group members feeling states may play a crucial role in the maintenance of intergroup prejudice. Copyright © 2005 John Wiley & Sons, Ltd.

A crucial role of facial expressions is to convey one's feeling to facilitate interpersonal or intergroup understanding and interactions (Kirouac & Hess, 1999; Philippot, Feldman, & Coats, 1999). Indeed, the exchange of nonverbal information in human interactions serves not only to inform interaction partners of each other's emotional (Ekman, Friesen, & Ellsworth, 1982; Hess, Kappas, & Scherer, 1988; Noller, 1985; Russell, 1994) or intentional states (Frijda, 1986; Frijda & Tcherkassof, 1997; Tcherkassof, 1999), but also to regulate aspects of their social relationships (Kirouac & Hess, 1999).

Surprisingly, the social context of the recognition of facial expressions has received little attention from researchers (Fernandez-Dols, 1999; Kirouac & Hess, 1999; Wagner & Lee, 1999). Nonverbal research has mainly focused on the impact of social context on encoding aspects of facial expressions,

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rather than on aspects of decoding such expressions. For instance, nonverbal research has investigated display rules or cultural norms that determine what kind of facial expressions can be displayed by whom, and under which circumstances (Ekman, 1993; Kupperbusch et al., 1999). Nonverbal research has also focused on the impact of the audience in the expression of emotion. It has been observed that the intensity of positive and negative emotional facial displays increases in the presence of a real or imagined audience, demonstrating the sociality dimension of emotional displays (Fridlund, 1991; Manstead, Fischer, & Jacobs, 1999; Wagner & Lee, 1999; Wagner & Smith, 1991).

However, the impact of the expresser's group membership on the attribution of action tendencies has been addressed in only a few studies. This article fills this gap by presenting three studies focusing on the impact of intergroup context on the attribution of action tendencies. We investigated whether the attribution of action tendencies is affected by the intergroup status of the expresser, and in particular, by the social role expectations associated with the expresser's group membership. For instance, expecting males of a minority out-group to be aggressive may foster the attribution of anger to these individuals' facial displays. In other words, the interpretation of out-group members' facial displays might be biased in a way congruent with the stereotype of that out-group. Such influences are likely to negatively bias intergroup communication, especially in the affective domain, and to reinforce stereotypes.

Different theoretical perspectives can be formulated to predict whether the activation of stereotypes biases the attribution of action tendencies and, providing this is the case, under which circumstances such stereotype-consistent biases would occur. Indeed, the attribution of action tendencies can be based on either facial features *per se* or on contextual features, such as the elicitors of emotion or the characteristics of the expresser, including his or her group membership (Fernandez-Dols, Wallbott, & Sanchez, 1991; Wallbott, 1988). The use of one cue or another might depend on the characteristics of the stimulus, for example its intensity or its ambiguity (Boucher & Carlson, 1980; Ekman et al., 1982; Shaver, Wu, & Schwartz, 1992; Wallbott, 1988).

Three theoretical rationales can be adopted regarding the impact of stereotypes on facial decoding. In a 'facial-feature-based attribution' perspective, the impact of facial emotional information is too significant for stereotypes to affect action tendencies attribution. Indeed, context does not seem to affect the attribution of an emotional characteristic for prototypic and intense facial expressions (Boucher & Carlson, 1980), and perceptual attribution based on prototypic emotional markers has been shown to be automatically and quickly performed (Kirouac & Doré, 1983). On the contrary, in a 'context-based attribution' perspective, stereotyping is an automatic and economical process in which decoders systematically use the expresser's group membership as a cue when stimuli are presented in an intergroup context (Fiske & Taylor, 1991; Koomen & Dijker, 1997; McArthur, 1981; Sanbonmatsu, Sherman, & Hamilton, 1987). An intermediate position would be that one cue or another is selected depending on the nature of the stimulus or on the amount of cognitive work needed to process the emotional information. For weak or ambiguous facial expressions, perceptual attribution based on emotional facial features implies an analytic processing that is hardly performed (Wallbott, 1988). As 'cognitive misers', decoders would use the expresser's group membership as a cue to activate an economical stereotyping process. To the contrary, perceptual attribution based on facial cues would be automatically performed for basic facial expressions (Kirouac & Doré, 1983). In this specific case, the expresser's group membership and the concomitant stereotype application would no longer represent an economical option.

At the empirical level, some studies have investigated the impact of the expresser's ethnicity on the decoding of faces. It has been observed that White-American decoders report difficulties in recognizing the identity of African-American faces (Deregowski, Ellis, & Shepherd, 1975; Malpass & Kravitz, 1960; Sherped, Deregowski, & Ellis, 1974) and in decoding African-American facial expressions (Kilbride & Yarczower, 1983). This effect has been attributed to the non-familiarity of other races' faces and facial expressions. Such a non-familiarity may be due to differences in face

physiognomy and to a lack of contact with out-group members. These two aspects make out-group physiognomies more complex for perceptual processing (Cross, Cross, & Daly, 1971; Malpass & Kravitz, 1960) and would facilitate the application of alternative strategies of information processing (Wallbott, 1991), including the application of stereotypes.

The notion of an influence of stereotype biases in the attribution of emotional characteristics is also supported by the observation that, when confronted with facial stimuli, people systematically analyse the key social features found in the context, for example appearance, gender (Hess et al., 2000; S. Sénécal, U. Hess, & R. E. Kleck, poster presented at the 26th International Congress of Psychology, Montréal, 16–21 August 1996; Wagner, Lewis, Ramsay, & Krediet, 1992) and social titles (R. L. Priest, unpublished manuscript; The effect of group membership on the perception of emotion). These features are used to infer group membership, which consequently activates a stereotype and a set of expectations, including expressive behaviours and inner feelings (McArthur, 1981; Sanbonmatsu et al., 1987).

A small body of research has also empirically tested the influence of group membership on the attribution of action tendencies. These studies assessed the impact of gender or social (e.g. professional background) membership on emotionality, intensity of emotional feelings, and accuracy in facial expression decoding (for a review, see Kirouac & Hess, 1999). They have shown that gender-specific emotional norms bias the attribution of intensity to emotional displays (e.g. Hess et al., 2000; S. Sénécal et al., poster presented at the 26th International Congress of Psychology, Montréal, 16–21 August 1996; Wagner et al., 1992). Moreover, the attribution of emotional intensity is also affected by the social identity of the expresser, likely because of emotional dispositions associated to the expresser's group (R. L. Priest, submitted; The effect of group membership on the perception of emotion). Nevertheless, it has not been shown that ethnic membership affects the attributions of action tendencies. Indeed, observed differences in attribution of emotion as a function of gender may be specific to this social feature and not replicable for ethnic membership. This supposition is corroborated by the observation that women are generally better expressers than men for a series of specific emotions (Wagner, Buck, & Winterbotham, 1993). Thus, observed differences in attribution of emotion may reflect either an actual difference between men and women, or lay theories regarding these differences (Hess et al., 2000).

Previous studies in this area also suffer from several limitations. Firstly, the expresser's group membership has been shown to affect the recognition accuracy or the intensity ratings, however not the attribution of an emotional characteristic *per se*. An alteration in the emotional characteristic attributed to expressers as a function of their membership would be more significant and would indicate an effect of stereotypes. Secondly, most of these studies (e.g. R. L. Priest, submitted; The effect of group membership on the perception of emotion; S. Sénécal et al., poster presented at the 26th International Congress of Psychology, Montréal, 16–21 August 1996; Wagner et al., 1992) have used basic facial expressions presenting little ecological validity. Indeed, most everyday facial expressions tend to be relatively weak and ambiguous (Motley & Camdem, 1988), and some have argued that the expresser's group membership is likely to influence specifically the decoding of weak expressions (Kirouac & Hess, 1999). Finally, no attention has been given to the attribution of emotional characteristics in terms of action tendencies (i.e. intentions to behave in a certain way following an emotion eliciting situation; Frijda, 1986) in an intergroup context.

This latter concern is important for several reasons. Firstly, some have argued and provided evidence indicating that action tendencies are more easily attributed to facial expressions than emotion categories as facial expressions may represent one's relational activity to the environment more than one's inner state (Frijda & Tcherkassof, 1997; Tcherkassof, 1999). Secondly, in an intergroup context, indications regarding one's relational activity are more important and adaptive than indications regarding one's inner state (Dijker, 1987). Indeed, action tendencies (or behavioural intentions in the context of attitudes; see, Fishbein & Ajzen, 1975) can be described as the situational counterparts of

personality traits, and previous research has long demonstrated the influence of stereotypes on the description of out-group members in terms of personality traits (for a review, see Fiske, 1998). Thus, stereotyping appears to be more likely to affect the attribution of action tendencies than to affect the attribution of emotions.

OVERVIEW AND HYPOTHESES

Our literature review indicates that (a) with the exception of gender, the impact of group membership on the attribution of action tendencies in terms of an emotional profile has yet to be investigated; (b) the impact of expressers' group membership on the attribution of an emotion *per se* has not been investigated either; (c) in contrast to everyday life situations, only basic facial expressions were presented in most previous studies; and (d) little attention has been given to the attribution of emotional characteristics in terms of action tendencies (Frijda, 1986; Frijda & Tcherkassof, 1997).

To address these limitations, three studies examined the influence of expresser's group membership on the attribution of emotional characteristic when participants interpret the facial display in terms of action tendencies. In Study 1, Belgian participants were presented with neutral facial expressions of Belgians and North-African young males. North-Africans represent an important immigrant community in Belgium, and are generally perceived as a threatening and aggressive group. In this context, we expected a stereotype consistent bias resulting in a greater attribution of aggressive action tendencies toward North-African expressers. Although very plausible, this hypothesis has never been empirically tested. In Study 2, participants were presented with both neutral and expressive faces of Belgians and North-African young males. A replication of Study 1 was expected for neutral faces. For expressive faces, two hypotheses are contrasted. On the one hand, given the automaticity of stereotype activation (Fiske, 1998), one might expect a stereotype consistent bias, even in the attribution of action tendencies on the basis of expressive faces. On the other hand, one could argue that facial expressions are automatically decoded as well (Kirouac & Doré, 1983) and that they constitute innate, potent unconditional stimulus (Öhman, 1999). As such, they may override the influence of activated stereotypes. Testing this alternative has important implications for both social cognition and emotion theories. Indeed, demonstrating that stereotype activation biases action tendencies attribution on the basis of facial expressions would indicate that the former is more automatic and more easily discarded than the latter, and that, for ecological reasons one should take into consideration stereotyping impact in the study of facial expression processing. Conversely, demonstrating that facial expression processing is not affected by stereotype activation would support the notion of Öhman (1999) that facial expressions are innate, potent unconditional stimuli.

Lastly, and in contrast to Studies 1 and 2, only Caucasian expressers labelled as belonging to the Walloon (French-speaking) and Flemish (Dutch-speaking) Belgian community were presented in Study 3 to Walloon participants (i.e. there is a long history of conflict between these two Belgian communities). Study 3 was expected to replicate Study 2 results in a situation where there are no differences between expressers' physiognomies.

STUDY 1

Action tendencies correspond to the behavioural intentions that follow an emotion-eliciting event (Frijda, 1986). In an intergroup context, they convey more specific and adaptive information than indications regarding one's emotional state (Dijker, 1987; Frijda, 1986). For example, believing that an interaction partner has the intention to engage in a fight may have a more concrete impact on the

decoder's reactions than believing he or she feels anger. In this perspective, Study 1 examined whether the expresser's group membership influenced the attribution of emotional characteristics in terms of action tendencies. In line with the hypotheses presented above, we expected participants to endorse judgment items more frequently when presented with an action tendency stereotypic of the expresser's group than when presented with a non-stereotypic action tendency. For instance, we expected participants to attribute aggressive action tendencies more frequently to North-Africans than to Belgians as this action tendency is stereotypically associated with the former ethnic group.

Method

Participants

One hundred and sixty-five French-speaking students at the University of Louvain (Belgium) were involved in the study (84 males and 81 females). They were Belgian nationals who agreed to participate when approached by the experimenter on campus. The average age of the sample was 19.9 years ($SD = 1.6$).

Facial Expressions

Sixteen young adult male expressers (ranging in age from 20 to 25 years) were selected on the basis of their group membership: eight were Belgians and eight were North-Africans. They were paid the equivalent of 5€ and were asked to pose neutral facial expressions. Images of their facial expressions were taken with a digital camera and transformed using Photoshop™ software. In particular, the image of the expresser's face was extracted from its natural background and then placed on a white background. Digitized photographs were also translated from colour to black and white (16-colour grey-scale palette), and the picture size was standardized (46×69 mm).

The valence of the expresser's facial displays and the visibility of their group membership were pre-tested. The order of these pre-tests was counterbalanced. On the one hand, photographs were presented on a computer screen for 500 ms, and 15 psychologists who work in the field of emotion judged whether the valence of the facial expressions was positive or negative. On the other hand, photographs were presented under identical conditions, and the same participants had to decide whether the expresser was a Belgian or a North-African. The faces used in the experimental task were selected on the basis of two criteria: (a) being judged positively valenced as frequently as being judged negatively valenced, and (b) being perfectly recognized as belonging to one group or to the other.

In addition, the Facial Action Coding System (FACS; Ekman & Friesen, 1978) was used to score the facial stimuli. This system is an anatomically based measurement method that distinguishes 44 facial action units (AUs). Two coders who were unaware of the emotional categories scored the facial stimuli. These coders had previously passed the efficiency test designed by Ekman and Friesen (1978). The entire facial configuration was codable and each was described in terms of a series of AUs. An intercoder agreement was calculated (96%). When disagreement occurred, the coders were invited to discuss their rating in order to find an agreement. The facial expressions selected for this experiment were all scored as being neutral.

Judgment Items

Stereotypic action tendencies for Belgians and North-Africans were selected from the results of a preliminary study (Yabar & Philippot, 2000). In this preliminary study, a series of action tendencies

Table 1. Experimental action tendencies

For Belgians versus North-Africans	For Walloon versus Flemish
<i>Non-stereotypic</i>	<i>Non-stereotypic</i>
1. Approach others	1. Show aggressiveness to others
2. Keep out the situation	2. Cry
3. Laugh with others	3. Shout
4. Reject others	4. Boil inwardly
5. Confront the situation	
<i>Stereotypic for Belgians</i>	<i>Stereotypic for Walloon</i>
1. Hide from others	1. Approach others
2. Conform with others desires	2. Laugh with others
3. Hide feelings	3. Feel impotent
4. Keep in distance	4. Show submission
5. Protect others	
<i>Stereotypic for North-Africans</i>	<i>Stereotypic for Flemish</i>
1. Show aggressiveness to others	1. Be attentive to the situation
2. Insult others	2. Confront the situation
3. Show exuberance	3. Keep distance
4. Show excitement	4. Protect oneself from others
5. Boil inwardly	

taken from Frijda, Kuipers, and Ter Schure (1989) was presented to 143 Belgian students. Their task involved evaluating the action tendencies most stereotypic of Belgians and of North-Africans. Items that significantly differed as a function of the target ethnic group were selected for further evaluation.

These items were then tested with respect to the time needed to read and understand them. Twenty-three psychology students were asked to read each judgment item on a computer screen and to click on the keyboard when they believed they had understood it. Action tendencies were selected if their comprehension time did not significantly differ from the mean comprehension time of all action tendencies ($M = 1586$ ms, $SD = 543$). Based on this pre-test, 15 items were selected for the present study: (a) five action tendencies stereotypic of Belgians, (b) five action tendencies stereotypic of North-Africans, and (c) five non-stereotypic action tendencies. Special attention was given to the valence of the items in order to prevent an imbalance of positively versus negatively evaluated items for one group or the other (see Table 1). To this effect, 10 judges working in the field of emotion judged the valence of the items. No differences were observed between the three categories of items.

Procedure

Participants were told that their task consisted of interpreting spontaneous facial expressions displayed either by Belgian or North-African expressers. The cover story was that photographs were taken from actual situations in which expressers were looking at emotion-eliciting video excerpts and that the judgment items corresponded to what they had reported feeling or wanting to express in these situations. They were also told that the photographs and correspondent judgment items were mixed and that they had to judge whether presented judgment items corresponded to facial expressions.

Equipment included a Macintosh Performa 6400/180 computer with a 40-cm colour monitor. Participants were seated 50 cm from the screen. They completed 12 training trials (i.e. presentation of countryside views followed by sentences which were descriptive or not), followed by an experimental task that included the presentation of five Belgian faces and five North-African faces. Each face was presented three times, each time with a different type of action tendency (non-stereotypic, stereotypic

of Belgians, or stereotypic of North-Africans). The succession of stimuli was presented two times using different associations of stimuli faces and judgment items, resulting in a total of 60 experimental trials for each participant.

Facial stimuli and judgment items were presented in a random order using Superlab™ software. Facial stimuli were displayed for 500 ms, followed by a blank screen of 500 ms, and a judgment item was presented until the participant gave a response. Participants had to judge whether items were associated with the face presented, using a key in the left part of the keyboard to indicate that faces and items were associated, or a key on the right part to indicate that faces and items were not associated. Frequencies of attributions of action tendencies were recorded.

Results

This experiment was designed to test whether stereotypes influence the attribution of emotional characteristics in terms of action tendencies. More specifically, action tendencies stereotypic of the out-group were expected to be more frequently attributed to out-group expressers, than non-stereotypic action tendencies or action tendencies stereotypic of in-group members.

Means of attributions of action tendencies were analysed in a 2 (Belgian vs. North-African expressers) \times 3 (non-stereotypic action tendencies, action tendencies stereotypic of Belgians, and action tendencies stereotypic of North-Africans) repeated-measures analysis of variance (ANOVA).¹ Firstly, a significant main effect for typicality of action tendencies, $F(2, 304) = 51.15$, $p < 0.0001$, was observed. Post-hoc contrasts showed that action tendencies stereotypic of Belgians were more frequently attributed than non-stereotypic action tendencies, $F(2, 151) = 47.78$, $p < 0.0001$, or than action tendencies stereotypic of North-Africans, $F(2, 151) = 47.78$, $p < 0.0001$, and that non-stereotypic action tendencies were more often attributed than items stereotypic of North-Africans, $F(2, 151) = 47.78$, $p < 0.0001$ ($M_s = 0.46$, 0.34 , and 0.27 , respectively). The analysis also revealed an interaction between expresser's ethnic group and typicality of judgment item, $F(2, 304) = 9.08$, $p < 0.0001$. Congruent with our hypothesis, post-hoc analyses indicated that the attribution of action tendencies stereotypic of North-Africans decreased when presented with a Belgian expresser as compared to the attribution of such action tendencies when presented with a North-African expresser, $F(1, 153) = 15.00$, $p < 0.0001$. Analyses also revealed a slight increase of attribution for non-stereotypic action tendencies presented with Belgian expressers, $F(1, 153) = 5.69$, $p < 0.05$, whereas no differences as a function of the expresser's group membership were observed for judgment items stereotypic of Belgians, $F(1, 152) = 0.03$, ns.

Means and standard deviations for the attribution of action tendencies are presented in Table 2.

Discussion

The present study was designed to demonstrate the impact of stereotypes on the attribution of emotional characteristics in terms of action tendencies. As expected, action tendencies stereotypic of North-Africans were more frequently attributed to North-African expressers than to Belgian expressers. In addition, action tendencies stereotypic of Belgians were globally more often attributed than action tendencies non-stereotypic or stereotypic of North-Africans. Such an effect may result from the fact that non-stereotypic action tendencies and action tendencies stereotypic of North-Africans reflected more extraversion than action tendencies stereotypic of Belgians (see Table 1). As a

¹An ANOVA with the same factors and the addition of Gender as a between-subjects factor was also computed. No effects including Gender reached significance. For the sake of clarity, only results of the 2×3 ANOVA will be reported.

Table 2. Attribution of action tendencies as a function of expresser's ethnic group and typicality of judgment items

Expresser's ethnic group	Action tendencies typicality		
	Non-stereotypic	Stereotypic for Belgians	Stereotypic for North-Africans
Mean attribution of action tendencies (max = 1)			
Belgian	0.36b (0.24)	0.46a (0.42)	0.23c (0.21)
North-African	0.33b (0.22)	0.46a (0.22)	0.32b (0.24)

Note: Values in the table correspond to the means of attribution of action tendencies. Means with different subscripts differ at the 0.05 level according to Bonferonni *t*-test.

consequence, these judgment items were less likely to be attributed to neutral faces independently of the expresser's group membership.

In sum, Study 1 results document an impact of stereotypes on the attribution of action tendencies for out-group member faces. That is, results show that the expresser's group membership affects the attribution of action tendencies *per se*, and not only the intensity ratings.

STUDY 2

Would the stereotype consistent bias observed in Study 1 be replicated when using emotional rather than neutral faces? Indeed, contextual information, such as group membership of the expresser, is expected to gain prominence in the attribution process when facial expressions are neutral or ambiguous (Ekman et al., 1982; Shaver et al., 1992; Wallbott, 1988). Would such biases persist with emotional facial expressions?

As noted above, three hypotheses have been proposed regarding the impact of stereotypes in the attribution of action tendencies. On the one hand, a 'facial-feature-based attribution' hypothesis states that the information conveyed by an emotional face is too significant for stereotypes to affect its interpretation. On the other hand, a 'context-based attribution' hypothesis poses that stereotyping represents such an automatic and economical process that the decoder systematically uses the expresser's group membership as a main cue of information when the stimuli are presented in an intergroup context. Finally, an intermediate hypothesis states that either facial or peripheral cues are used in the attribution process depending on the emotional intensity of the stimulus or on the amount of cognitive resources available to process this information. When facial expressions are emotionally neutral, the attribution process would be based on contextual features, including expresser's group membership in intergroup contexts, whereas when facial expressions are emotional, the attribution process would be based on facial features *per se*. We thus defend an intermediate position. The activation of one cue or the other to decode facial expressions should vary as a function of the emotional intensity of the stimulus. To test this hypothesis, Study 2 replicated Study 1 with the additional factor that facial stimuli were either neutral or emotional.

Method

Participants

Ninety-eight French-speaking students at the University of Louvain (Belgium) took part in the study (56 females and 42 males). They were Belgian nationals who had agreed to participate

when approached by the experimenter on campus. The average age of the sample was 20.5 years ($SD = 1.3$).

Facial Stimuli

Sixteen young male adults were selected on the basis of their group membership: Eight were Belgians and eight were North-Africans. They were paid the equivalent of 5€ to pose neutral and basic emotional facial expressions of anger, joy, sadness and fear. Images of their facial expressions were taken with a digital camera and transformed using Photoshop™ software. The image of the expresser's face was extracted from its natural background and placed in front of a white background, digitized photographs were translated from colour to black and white (16-colour grey-scale palette), and the picture size was standardized (46×69 mm).

Neutral facial expressions were the same as those used in Study 1. For the emotional facial expressions, the purity of the emotions displayed and the visibility of expresser's group membership were pre-tested. Twenty psychologists who work in the field of emotion judged in a counterbalanced order, (a) on 7-point Likert scales (from 'neutral' to 'blatant emotion of joy, anger, sadness or fear'), whether expressers displayed the basic emotional expressions of joy, anger, sadness, or fear, and (b) whether expressers were Belgians or North-Africans. The emotional faces used in the experimental task were selected on the basis of two criteria: (a) the expresser had been perfectly recognized as belonging to his group, and (b) the target emotion had received the highest intensity in at least 50 % of the cases. In addition, a FACS coding was applied to all the facial stimuli by two coders (intercoder agreement = 96%). When disagreement occurred, the coders were invited to discuss their rating in order to find an agreement. The facial expressions selected for this experiment were all in conformity with the criteria for emotional expression proposed by Wiggers (1982). The same judgment items as in Study 1 were used (see Table 1).

Procedure

The procedure was identical to that used in Study 1, with the exception that facial expressions were either neutral or emotional. Each participant performed 12 training trials, followed by an experimental task consisting of the presentation of 10 Belgian faces and 10 North-African faces, with half of the expressions in each group being neutral and the other half being emotional. Each face was presented three times, each time with a different type of action tendencies (non-stereotypic, stereotypic of Belgians or stereotypic of North-Africans), resulting in 60 experimental trials per participant. Action tendencies were exactly the same as those used in Study 1. It should be noted that, in the emotion condition, the different types of action tendencies were systematically presented with a facial expression portraying a congruent emotion. Thus, the specific type of emotion portrayed is nested within the action tendency factor. Frequencies of attributions of action tendencies were recorded.

Results

Study 2 was designed to test whether the application of intergroup stereotypes in the attribution of action tendencies varies as a function of the emotionality of face. It was expected that stereotypes would be applied more readily for neutral facial expressions than for emotional ones.

To test this hypothesis, mean frequencies of action tendencies attribution were analysed in a 2 (neutral vs. emotional faces) \times 2 (Belgian vs. North-African expressers) \times 3 (non-stereotypic action

tendencies, action tendencies stereotypic of Belgians, and action tendencies stereotypic of North-Africans) repeated-measures ANOVA.² Main effects for emotional information in the facial display, $F(1, 95) = 26.98, p < 0.0001$, expresser's ethnic group, $F(1, 95) = 17.09, p < 0.0001$, and typicality of judgment items, $F(2, 180) = 65.49, p < 0.0001$, were observed. The pattern of means indicated that the attribution of action tendencies was more frequent when facial expressions were emotional than when they were neutral ($M_s = 0.46$ and 0.37 , respectively). Moreover, the pattern of means showed that more action tendencies were attributed to Belgians than to North-Africans ($M_s = 0.44$ and 0.33 , respectively). With respect to the effect of the typicality of judgment items, post-hoc contrasts showed that action tendencies stereotypic of North-Africans, $F(2, 94) = 87.68, p < 0.0001$, or non-stereotypic, $F(2, 94) = 87.68, p < 0.0001$, were more often attributed than action tendencies stereotypic of Belgians ($M_s = 0.45, 0.49$, and 0.30 , respectively). The analysis also revealed an interaction between typicality of judgment items and expresser's group membership, $F(2, 150) = 16.71, p < 0.0001$. Simple effect analyses showed that non-stereotypic judgment items were globally more often attributed to Belgians than to North-Africans, $F(1, 95) = 9.52, p < 0.0001$, whereas the attribution of judgment items stereotypic of Belgians, $F(1, 95) = 0.23$, ns, or North-Africans, $F(1, 95) = 0.16$, ns, did not vary as a function of expresser's group membership.

Finally, and of central interest in order to test our main hypothesis, a triple interaction between emotional information in the facial display, expresser's group membership and typicality of judgment items was found, $F(2, 182) = 13.72, p < 0.0001$. This interaction was further examined by separately computing 2 (Belgian vs. North-Africans expressers) \times 3 (non-stereotypic judgment items, judgment items stereotypic of Belgians, and judgment items stereotypic of North-Africans) repeated-measures ANOVAs for the neutral and the emotional conditions.

In the neutral condition, the analysis indicated a main effect for typicality of judgment item, $F(2, 190) = 26.84, p < 0.0001$, and an interaction between expresser's group membership and typicality of judgment item, $F(2, 190) = 13.64, p < 0.0001$. Regarding the main effect, post-hoc contrasts showed that when facial expressions are neutral, judgment items stereotypic of Belgians, $F(1, 94) = 18.60, p < 0.0001$, and non-stereotypic judgment items, $F(1, 94) = 18.60, p < 0.0001$, were more often attributed than judgment items stereotypic of North-Africans ($M_s = 0.45, 0.39$, and 0.25 , respectively). More importantly, post-hoc analyses of the interaction revealed that when facial expressions were neutral, judgment items stereotypic of North-Africans were more often attributed to North-African expressers, $F(1, 95) = 2.51, p < 0.03$, whereas non-stereotypic judgment items were more often attributed to Belgian expressers, $F(1, 95) = 4.23, p < 0.0001$. No differences were observed for judgment items stereotypic of Belgians, $F(1, 95) = 0.16$, ns.

When facial expressions were emotional, main effects for expresser's group membership, $F(1, 95) = 37.59, p < 0.0001$, and for typicality of judgment item, $F(2, 190) = 432.66, p < 0.0001$, were observed, as well as an interaction between expresser's group membership and typicality of judgment item, $F(2, 190) = 8.16, p < 0.0001$. Regarding expresser's group membership, patterns of means show that action tendencies were more often attributed to Belgians than to North-Africans ($M_s = 0.49$ and 0.42 , respectively). With respect to typicality of judgment item, post-hoc contrasts showed that non-stereotypic items, $F(1, 94) = 8.13, p < 0.0001$, or items stereotypic of North-Africans, $F(1, 94) = 8.13, p < 0.0001$, were more often attributed than action tendencies stereotypic of Belgians ($M_s = 0.58, 0.64$, and 0.15 , respectively). Regarding the interaction, post-hoc analyses revealed that non-stereotypic items, $F(1, 95) = 5.13, p < 0.0001$, or items stereotypic of North-Africans, $F(1, 95) = 4.29, p < 0.0001$, were more often attributed to Belgian than to North-African expressers. No such difference was reported in relation to judgment items stereotypic of Belgians, $F(1, 95) = 0.25$, ns.

²An ANOVA with the same factors and the addition of Gender as a between-subjects factor was also computed. No effects including Gender reached significance. For the sake of clarity, only results of the $2 \times 2 \times 3$ ANOVA will be reported.

Table 3. Attribution of action tendencies as a function of emotionality of stimulus, expresser's ethnic group, and typicality of judgment items

Expresser's ethnic group	Emotionality of stimulus					
	Neutral			Emotional		
	Typicality of judgment items			Typicality of judgment items		
	Non-stereotypic	Stereotypic for Belgians	Stereotypic for North-Africans	Non-stereotypic	Stereotypic for Belgians	Stereotypic for North-Africans
	Mean action tendencies attribution (max = 1)					
Belgian	0.47a (0.31)	0.45a (0.30)	0.21c (0.29)	0.65a (0.21)	0.16c (0.14)	0.68a (0.18)
North-African	0.32b (0.28)	0.45a (0.34)	0.29b (0.28)	0.52b (0.22)	0.15c (0.14)	0.59b (0.22)

Note: Values in the table correspond to the means of attribution of action tendencies. Means with different subscripts differ at the 0.05 level according to Bonferonni *t*-test, within emotional conditions.

Means and standard deviations for the attributed action tendencies are presented in Table 3.

Discussion

Study 2 examined whether stereotypes would still be applied to the attribution of action tendencies when facial expressions display a clear emotional signal. Facial expressions were either neutral or emotional, and according to the 'dual-based attribution' hypothesis, the attribution process should be based on expresser's group membership for neutral facial expressions and on facial features *per se* for emotional facial expressions. In other words, the activation of one cue or the other to 'decode' facial expressions should vary as a function of the emotionality of the face.

Congruent with this hypothesis and replicating Study 1, we found that when facial expressions are neutral, action tendencies stereotypic of North-Africans are more often attributed to North-Africans. However, and in contrast with our hypothesis, when facial expressions are emotional, action tendencies stereotypic of North-Africans as well as non-stereotypic action tendencies are more often attributed to Belgians whereas action tendencies stereotypic of Belgians are attributed equally with respect to expresser's group membership. In sum, the prediction of a stereotype bias is met in the neutral facial expression condition, however the pattern of results does not meet any of the three hypotheses presented above.

A possible explanation for the pattern of results observed in the emotional condition apparently resides in the main effect of group membership in that condition. Overall, action tendencies were more frequently attributed to in-group than to out-group members. Such an in-group over-attribution could reflect two distinct phenomena. A first possibility is that participants experienced more difficulty in 'decoding' facial expressions of out-group members because they have less in-depth contact with the out-group (Kilbride & Yarczower, 1983). This lack of contact would generate an impression of unfamiliarity with out-group members' faces, resulting in an uncertainty in 'decoding' their facial expressions. This effect would not appear in the neutral condition, as the uncertainty is already generated for the two groups by the absence of an emotional signal in that condition. A second possibility is that participants just wanted to favour in-group members by attributing fewer feelings to out-group members. Indeed, displaying an emotion, specifically a complex feeling, is perceived as a positive and typically human feature (Paladino, et al., 2002). Thus, attributing emotions to a higher

degree when presented with an in-group member's facial expression as opposed to an out-group member's facial expression might represent implicit prejudice towards out-group members: they appear less human than in-group members are, because they display fewer emotions.

Yet, action tendencies stereotypic of Belgians seem to be an exception, as no over-attributions to one group or the other were observed in the emotional condition. However, one should note that as action tendencies stereotypic of Belgians reflect more passivity and inhibition, these items were much less appropriate for full-blown expression than the non-stereotypic or North-African stereotypic action tendencies.

STUDY 3

The previous experiments have shown that, in intergroup contexts, out-group members' neutral facial expressions are interpreted in line with an out-group stereotype. However, in this study, group membership was confounded with a difference in physical appearance, the physiognomy of the face bearing the information of group membership. One can thus question whether group membership is a sufficient condition for the application of stereotypic action tendencies, or if a difference in physiognomy constitutes an additional necessary condition. Indeed, some authors have defended the notion that the differential application of stereotypes could be explained by a difference in physiognomies (Deregowski et al., 1975; Kilbride & Yarczower, 1983; Malpass & Kravitz, 1960; Sherped et al., 1974). This difference increases the complexity of facial expressions for unfamiliar out-group faces and would encourage either the use of contextual cues and the application of stereotypes or a more cautious stand for unfamiliar faces, resulting in less attribution of emotional characteristics. This latter possibility has been evoked to account for the pattern of results of Study 2's emotional condition.

In contrast, the differential application of stereotypes in the attribution of action tendencies could also be explained by differences between the expressers' group memberships (Fiske & Taylor, 1991; Koomen & Dijker, 1997; McArthur, 1981; Sanbonmatsu et al., 1987). This latter hypothesis implies that the application of stereotypes persists when physiognomies do not differ from one group to the other. In other words, this effect should also be observed with out-group faces not differing from the in-group in terms of physiognomy, and thus not differing from the in-group in terms of familiarity.

Study 3 was designed to further investigate the effect of the emotional nature of the stimuli and to test whether the activation of stereotypes is directly initiated by the expresser's group membership or indirectly by a difference in morphology. In addition, replicating Study 2 with stimuli not differing in morphology might help understanding the pattern of results observed in the emotional condition of Study 2: if again, more action tendencies are attributed to the in-group in that condition, one could rule-out the explanation in terms of unfamiliarity of the face, and favour the in-group favouritism hypothesis.

The same facial stimuli from Caucasian expressers were presented to the participants as being the faces of either Walloon (French-speaking) or Flemish (Dutch-speaking) Belgian nationals. Belgium is divided into two main linguistic areas: the French-speaking area situated in the south and known as Wallonia, and the Dutch-speaking area situated in the north and known as Flanders. Members of French- and Dutch-speaking communities present identical ethnic features but hold relatively conflictive relations that trigger prejudice (Bourhis, Giles, Leyens, & Tajfel, 1979; Yzerbyt, Leyens, & Bellour, 1995) and different stereotypes in terms of global expressiveness (Pennebaker, Rimé, & Blankenship, 1996). Consequently, if a difference of group membership constitutes a sufficient condition for stereotypes to be applied, an effect of stereotypes was expected to be observed in Study 3. On the contrary, if a difference in physiognomy constitutes a necessary condition for the application of

stereotypes, the effect of stereotypes would not have been observed in this experiment, as only Caucasian expressers are presented.

Because most Walloons have roots and contacts with both the Walloon and the Flemish communities for geographical and historical reasons, actual out-group contacts were controlled for in this experiment. Indeed, intergroup contacts have been shown to be an important moderator of prejudice and stereotyping under certain conditions (Brown, 1996; Pettigrew, 1998; Tzeng & Jackson, 1994). A measure of out-group contacts offers a reliable way to control for the participants' links to Flemish and Walloon communities independently of their group membership (Tzeng & Jackson, 1994).

Method

Participants

Seventy-two French-speaking students at the Catholic University of Louvain (Belgium) took part in the study (44 females and 28 males). They were Walloons who agreed to participate when approached by the experimenter on campus. The average age of the sample was 20.2 years ($SD = 2.0$). Participants were randomly assigned to either the neutral or the emotional condition, which resulted in one half of the sample being asked to decode neutral facial expressions ($n = 37$) and the other half being asked to decode emotional ones ($n = 35$).

Facial Expressions

Stimuli were selected among a series of standardized neutral and emotional facial expressions (i.e. joy, sadness, anger and fear) displayed by young Caucasian males Japanese and Caucasian Facial Expression of Emotion (JACFEE), Matsumoto & Ekman, 1988). The expressions were digitized in black and white (16-colour grey-scale palette) using PhotoshopTM software, the image of the expresser's face was extracted from its natural background, placed in front of a white background, and the picture size was standardized (46×69 mm). Expressers were randomly presented as belonging to the Walloon versus Flemish group.

Judgment Items

Stereotypic action tendencies for Walloons and Flemish were selected from a large set of action tendencies (Frijda et al., 1989) by inviting 27 Walloon students to evaluate the action tendencies most stereotypic of the Walloon and the Flemish communities. As in Study 1, action tendencies that significantly differed as a function of the target group were selected for further evaluation. These items were then tested with respect to the time needed to read and understand them. That is, 23 Walloon students were asked to read each judgment item on a computer screen and to click on the keyboard when they believed they had understood it. Based on this pre-test, 12 items were selected for the present study: (a) four action tendencies stereotypic of Walloons, (b) four action tendencies stereotypic of Flemish, and (c) four non-stereotypic action tendencies. Judgment items were selected when their comprehension time did not significantly differ from the mean comprehension time ($M = 1489$ ms, $SD = 489$), and special attention was given to the valence of the items in order to prevent an imbalance of positive versus negative items between groups (see Table 1). To this effect, 10 judges working in the field of emotion judged the valence of the items. No differences were observed between the three categories of items.

Procedure

The procedure was identical to the one used in Study 2, except that the expresser's group membership was now either Walloon or Flemish (as opposed to Belgian or North-African). Participants were told that their task consisted of attributing action tendencies on the basis of facial expressions displayed by either a Walloon or a Flemish expresser. As in the previous studies, they were made to believe that the photographs were taken from actual situations in which expressers were looking at emotion-eliciting video excerpts and that the judgment items corresponded to what expressers had reported feeling or wanting to display in these situations.

As described above, half of the participants were asked to judge whether action tendencies were associated with the neutral facial expressions, and the remaining half were asked to judge whether judgment items were associated with the emotional facial expressions. In both cases, participants completed 12 training trials, followed by an experimental task including the presentation of four 'Walloon' and four 'Flemish' faces. Each face was presented three times, each time with a different type of action tendency (non-stereotypic, stereotypic of Walloons, or stereotypic of Flemish). This series of stimuli was presented two times using different associations of stimuli faces and judgment items, resulting in 48 experimental trials per participant. Half of the stimuli were designated as belonging to the Walloon community, and the other half as being Flemish by a label (i.e. 'Walloon' vs. 'Flemish') presented before each set of images within the series of stimuli. The sets of stimuli were presented as belonging to one group or the other in a counterbalanced order.

Facial stimuli were randomly displayed for 500 ms, followed by a blank screen for 500 ms, and judgment items were presented until the participants gave a response. Participants used the keyboard to judge whether items were associated with each face presented. Frequencies of attributions of action tendencies were recorded.

In addition, participants were asked to complete a French translation of an 'out-group contact' scale (Tzeng & Jackson, 1994). This scale relates to the conditions theoretically needed for intergroup contacts to reduce prejudice: (a) frequency, (b) positive valence, (c) equal status, (d) cooperative interdependence, (e) encouragement by authorities, (f) relative intimacy, and (g) inconsistency with regard to stereotypes. In this scale, participants had to rate seven items on a 5-point bipolar continuum (Tzeng & Jackson, 1994). Higher scores on this scale indicate a higher quality of out-group contacts.

Results

Mean frequencies of attribution were analysed in a 2 (neutral vs. emotional) \times 2 (Walloon vs. Flemish) \times 3 (non-stereotypic judgment items, judgment items stereotypic of Walloon, and stereotypic of Flemish) mixed ANOVA with emotional information in the facial display as a between-subject variable. Main effects for emotional information in the facial display, $F(1, 69) = 91.11$, $p < 0.0001$, and typicality of judgment items, $F(2, 138) = 25.56$, $p < 0.0001$, were observed. Regarding emotional information in the facial display, the pattern of means shows that action tendencies are more often attributed in the emotional condition than in the neutral condition ($M_s = 0.61$ and 0.30 , respectively). Regarding typicality of judgment items, post-hoc contrasts show that judgment items stereotypic of Flemish, $F(2, 69) = 20.23$, $p < 0.0001$, and non-stereotypic judgment items, $F(2, 69) = 20.23$, $p < 0.0001$, are more frequently attributed than judgment items stereotypic of Walloons ($M_s = 0.51$, 0.51 , and 0.35 , respectively). An interaction between emotional information in the facial display and typicality of judgment items was also significant, $F(2, 138) = 22.41$, $p < 0.0001$. Post-hoc contrasts revealed that in the emotional condition, non-stereotypic judgment items, $F(2, 71) = 20.43$,

$p < 0.0001$, and judgment items stereotypic of Flemish, $F(2, 71) = 20.43$, $p < 0.0001$, are more often attributed than judgment items stereotypic for Walloons ($M_s = 0.76, 0.45$, and 0.62 , respectively), and the reverse pattern is observed in the neutral condition where non-stereotypic judgment items, $F(2, 71) = 20.43$, $p < 0.0001$, and judgment items stereotypic of Walloons, $F(2, 71) = 20.43$, $p < 0.0001$, are less attributed than action tendencies stereotypic of Flemish ($M_s = 0.25, 0.25$, and 0.39 , respectively). However, the interaction between emotional information in the facial display, expresser's group membership and typicality of judgment items did not reach significance, $F(2, 138) = 2.14$, $p < 0.12$.

As stated above, Walloons have roots and contacts with both the Walloon and the Flemish communities. As familiarity with the Flemish community might be an important moderator of stereotyping, the mean score of the out-group contacts questionnaire ($M = 1.97$, $SD = 1.77$) was used as a covariate to control for the effect of intergroup contacts in all subsequent analyses. Means of attributions of action tendencies were thus analysed in a 2 (neutral vs. emotional) \times 2 (Walloon vs. Flemish stimuli) \times 3 (non-stereotypic action tendencies, action tendencies stereotypic of Walloons, and action tendencies stereotypic of Flemish) mixed analysis of covariance (ANCOVA), with emotional information in the facial display as a between-subject variable and the quality of out-group contact as a covariate. This analysis revealed a main effect for emotional information in the facial display, $F(1, 68) = 85.29$, $p < 0.0001$, and for typicality of judgment item, $F(2, 136) = 12.02$, $p < 0.0001$. The pattern of means showed that action tendencies were more often attributed when facial expressions were emotional, than when they were neutral ($M_s = 0.61$ and 0.30 , respectively). Moreover, post-hoc contrasts showed that non-stereotypic action tendencies, $F(2, 68) = 10.42$, $p < 0.0001$, or action tendencies stereotypic of Flemish, $F(2, 68) = 10.42$, $p < 0.0001$, were more often attributed than action tendencies stereotypic of Walloons ($M_s = 0.51, 0.51$, and 0.35 , respectively). An interaction between emotionality of stimulus and typicality of judgment items, $F(2, 136) = 12.02$, $p < 0.0001$, was also observed.

Finally, the analysis revealed the expected second order interaction between emotional information in the facial display, expresser's group membership, and typicality of judgment items, $F(2, 136) = 2.49$, $p < 0.05$. This interaction was further decomposed using 2 (Walloon vs. Flemish stimuli) \times 3 (non-stereotypic action tendencies, action tendencies stereotypic of Walloons, and action tendencies stereotypic of Flemish) repeated ANCOVAs, which included the quality of out-group contacts as a covariate and which were computed separately for the neutral and emotional conditions.

In the neutral condition, a main effect for the typicality of judgment item, $F(2, 68) = 4.16$, $p < 0.02$, and an interaction between expresser's group membership and typicality of judgment item, $F(2, 68) = 3.18$, $p < 0.04$, were observed. Post-hoc contrasts showed that, when facial expressions were neutral, action tendencies stereotypic of Flemish were more often attributed than were non-stereotypic action tendencies, $F(2, 35) = 3.58$, $p < 0.02$, or action tendencies stereotypic of Walloons, $F(2, 35) = 3.58$, $p < 0.02$ ($M_s = 0.39, 0.25$, and 0.25 , respectively). With respect to the interaction between expresser's group membership and typicality of judgment item, post-hoc analyses showed that when facial expressions were neutral, action tendencies stereotypic of Flemish were more often attributed to Flemish expressers, $F(1, 34) = 2.55$, $p < 0.05$, whereas non-stereotypic action tendencies or action tendencies stereotypic of Walloons were more often attributed to Walloons, $F(1, 34) = 2.35$, $p < 0.05$, and $F(1, 34) = 4.99$, $p < 0.03$.

When facial expressions were emotional, no effect was observed except for typicality of judgment item, $F(2, 68) = 432.66$, $p < 0.0001$. Indeed, post-hoc contrasts showed that action tendencies stereotypic of Flemish, $F(2, 32) = 422.20$, $p < 0.0001$, as well as non-stereotypic action tendencies, $F(2, 32) = 432.66$, $p < 0.0001$, were more often attributed than action tendencies stereotypic of Walloons ($M_s = 0.62, 0.76$, and 0.45).

Means and standard deviations for the attributed action tendencies are presented in Table 4.

Table 4. Attribution of action tendencies as a function of emotionality of stimulus, expresser's group membership, and judgment items, and with out-group contacts as a co-varied variable

Expresser's ethnic group	Emotionality of stimulus					
	Neutral			Emotional		
	Typicality of judgment items			Typicality of judgment items		
	Non-stereotypic	Stereotypic for Walloon	Stereotypic for Flemish	Non-stereotypic	Stereotypic for Walloon	Stereotypic for Flemish
	Mean action tendencies attribution (max = 1)					
Walloon	0.29c (0.22)	0.29c (0.13)	0.36b (0.20)	0.74a (0.29)	0.42c (0.28)	0.62b (0.17)
Flemish	0.22d (0.20)	0.22d (0.15)	0.43a (0.21)	0.78a (0.20)	0.47c (0.27)	0.63b (0.21)

Note: Values in the table correspond to the means of attribution of action tendencies. Means with different subscripts differ at the 0.05 level according to Bonferonni *t*-test, within emotional conditions, and after partialling out the covariate.

Discussion

Study 3 aimed at replicating Study 2 with three differences: the facial stimuli were identical between group membership conditions, in order to control for the effect of differences in physiognomy; a different out-group and thus different action tendencies were used, in order to examine whether the pattern of results for Study 2 was constraint by the specific action tendencies used; contact with the out-group was controlled for.

With respect to our main hypothesis, stereotypes should be applied only when judging neutral facial expressions. Our results clearly show that indeed, when facial expressions were neutral, action tendencies stereotypic of Flemish were more often attributed to Flemish, whereas non-stereotypic action tendencies or action tendencies stereotypic of Walloons were more often attributed to Walloons, provided that contact with the out-group was controlled for. In contrast, when facial expressions are emotional, attribution of action tendencies was not modulated by the expresser's group membership. This pattern of results fully supports the hypothesis that stereotypic attributions occur specifically when facial expressions are neutral.

This effect was observed for faces of members of groups not differing in terms of morphology, which corroborates the assumption that the expresser's group membership can directly initiate the application of stereotypes. In other words, knowing that an expresser belongs to a specific out-group is a sufficient condition for applying a stereotype in the attribution of emotional characteristics. Differences in physiognomies are not necessary conditions for such a bias to interfere with the attribution of action tendencies, at least when facial expressions are neutral.

In summary, patterns reported for neutral faces in Studies 1 and 2 are replicated in Study 3, with the addition that no differences of physiognomy were contrasting the in- and out-groups. In addition, results of Study 3 suggest that stereotype application is over-ruled by a clear emotional signal in the face. These findings fit well with the assumption that the application of stereotypes varies as a function of the nature of the stimulus (Ekman et al., 1982; Shaver et al., 1992; Wallbott, 1988), but not as a function of the degree to which one is familiar with the expresser's physiognomy.

GENERAL DISCUSSION

The main goal of this paper was to investigate the role of stereotyping in the attribution of action tendencies in intergroup contexts. On the one hand, it had not yet been shown that ethnic membership

could affect the attribution of action tendencies, as gender membership does. On the other hand, emotional action tendencies attribution has not yet been considered in that context. However, this concept from the emotion field is particularly useful for the study of intergroup relations because of its proximity with the concept of behavioural intentions. At a more general level, emotion theorists have shown that the decoding of emotional facial expressions largely depends upon automatic processes, and intergroup theorists hold the same statement for stereotype application. Given the importance of emotion attribution in an intergroup context, it is of utmost importance to understand how these two automatic processes interact.

This paper specifically investigates the influence of expresser's group membership in the attribution of emotional characteristics on the basis of facial expressions according to whether those facial expressions are emotional as opposed to neutral and ambiguous (Ekman et al., 1982; Shaver et al., 1992; Wallbott, 1988). Three rationales were proposed. According to the first rationale, the effect of emotional facial features is too significant for stereotypes to affect the attribution of action tendencies. According to the second one, stereotyping is such an automatic and economic process that it systematically impacts upon the attribution of action tendencies in an intergroup context. According to the third hypothesis, the attribution of action tendencies would be a function of either emotional facial signal or group stereotypes depending on the emotional intensity of the stimulus.

Incongruent with the first hypothesis, an increase in stereotype application was reported in all three studies when action tendencies stereotypic of the out-group were presented with neutral out-group faces. The second hypothesis is also rejected as an increase in stereotype application is not observed when action tendencies of out-group members are presented with clearly emotional out-group faces (Studies 2 and 3). This pattern of results fits well with the third rationale, if it is for the pattern of results observed in the emotional condition of Study 2 (we will address this issue in the next paragraph). Still, the fact that a stereotype was not applied in the judgment of clearly emotional out-group faces is consistent with the notion that stereotyping in the attribution process depends upon characteristics of the stimulus (Boucher & Carlson, 1980; Ekman et al., 1982; Shaver et al., 1992; Wallbott, 1988). In addition, our results show no application of out-group stereotype in the emotional condition. In sum, the third rationale would be fully supported by our results, if it is for the over-attribution of action tendencies to the in-group in the emotional condition in Study 2, an observation not replicated in Study 3.

How could this discrepancy between Studies 2 and 3 be explained? In the discussion of Study 2, one hypothesis proposed was that the under-attribution of action tendencies to out-group expressive faces was due to uncertainty in judgment generated by unfamiliarity with the facial morphology of the out-group faces. This notion is supported by previous studies (Cross et al., 1971; Deregowski et al., 1975; Kilbride & Yarczower, 1983; Malpass & Kravitz, 1960; Sherped et al., 1974). The fact that this effect disappeared in Study 3 where facial stimuli were identical is congruent with this hypothesis. The other hypothesis proposed in Study 2 discussion was in terms of in-group favouritism (Paladino et al., 2002). However, over-attribution of emotional action tendencies to the in-group has only been observed in the emotional condition of Study 2. The in-group favouritism hypothesis is thus not sustained in our data and we tend to favour the hypothesis of unfamiliarity with the facial morphology of the out-group faces. Still, further research specifically manipulating this dimension is needed to ascertain this notion.

Study 3 also supports the notion that a difference in group membership constitutes a sufficient condition for a stereotype to be applied. It showed that even when there were no differences in physiognomies, stereotype application increases when the typicality of judgment items and the expresser's group membership are congruent for neutral facial expressions. This finding fully supports the assumption that the expresser's group membership can directly initiate the application of stereotypes. In other words, knowing that the expresser belongs to a specific group is a sufficient condition for applying stereotypes in the attribution of action tendencies.

Two important aspects of the present studies are that they have used either neutral or full-blown facial expressions and that decoders had to answer in a 'yes' or 'no' format rather than in terms of intensity ratings. This latter aspect, a conservative methodological option, stresses the strength of the stereotype impact on the 'decoding' of neutral expressions. Still, in most everyday intergroup situations, (a) interpretation of facial expressions is not a matter of 'yes' or 'no' judgments, (b) facial expressions are of weak to moderate intensity, (c) they often are not pure but display emotional blends, and (d) they are very transient. In order to be able to determine the extent of the effect of stereotyping in the attribution of action tendencies, further studies are needed in which stimulus faces would display weak or blended emotional signals, the duration of presentation of stimulus faces would be manipulated, and participants' judgments would be recorded in terms of intensity ratings. It is likely that such studies would demonstrate that the impact of stereotyping is not limited to neutral facial expressions. Indeed, the difficulty of decoding emotional displays has been shown to be linearly related to their intensity (Hess, Blairy, & Kleck, 1998), with the exception of happy faces, as happiness is still highly recognizable at very low levels of physical intensity (see 'happy face advantage' in Hess et al., 1998).

A remaining matter pertains to the role played by this interpretation bias of out-group members' feeling states and intentions in the maintenance of intergroup prejudice. The present experiments have shown that out-group nonverbal attitudes might be negatively interpreted in specific conditions (i.e. when displaying neutral faces), because stereotypes related to prejudiced groups are negatively valenced and influence the interpretation of neutral facial displays. The fact that the expresser's group membership influences the attribution of action tendencies may have important consequences for the efficacy of interpersonal or intergroup communication (Patterson, 1999). Indeed, facial displays convey what one will do in a current situation or what one would like the other to do (Fridlund, 1994). Such information can therefore affect interpersonal or intergroup relationships.

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