WHAT WE KNOW ABOUT PEOPLE SHAPES THE INFERENCES WE MAKE ABOUT THEIR PERSONALITIES

Fernando Gordillo
Camilo José Cela University

Lilia Mestas
National Autonomous University of Mexico

ABSTRACT

The ability to form impressions allows making inferences about others based on minimal, swift and automatic interactions. The verbal context (*what we Know about people*) could play an important role in this process. An experiment was conducted involving 95 individuals who were asked to make inferences on the personality and emotionality perceived in a mixed facial expression. Five positive words and five negative ones were used to establish the levels of the variable referred to as verbal context (negative and positive). The results revealed the person was attributed greater sociability when an individual had positive information on the person producing the facial expression. What we know about other people has a modulating effect on some aspect of the personality perceived through a facial expression, with a clearly adaptive value in the prediction of their behaviour.

INTRODUCTION

Impression formation is a classic line of research in social psychology (Anderson & Barrios, 1961; Anderson & Norman, 1964; Asch, 1952; Luchins, 1957, 1958). The process begins when we associate the personality traits of the individuals we perceive with our accumulated cognitive capital (Newman & Uleman, 1990). These judgements may be made because people have preconceived associations between personality traits and behaviours (Brown, 1986; Fiske & Taylor, 1991). These associations are based on memory processes, for what we know about other people will have an impact on the inferences we make about their personality (Nisbett & Ross, 1980). Accordingly, the verbal context referring to people's life is a key variable for understanding the process that underpins the formation of impressions.

Initial personality inferences are made over short periods of time, when individuals are exposed to continuous interactive flows with another person (Ambady, Bernieri, & Richeson, 2000), even through photographs (Berry, 1990). Evidence has also been forthcoming to show that the prior presentation of emotional facial expressions leads to changes in the evaluation of neutral facial

expressions, as regards the emotion and personality they reflect (Anderson, Siegel, White, & Barrett, 2012). These findings imply a generalisation of the adjustment mechanisms that allow a quick, albeit not always accurate, inference to be made of another person's harmful intentions (Oosterhof & Todorov, 2006), and it is through facial expression that this process becomes more apparent.

Facial expression is considered a dynamic process of communication that rarely acquires meaning on its own (Shen-Mou & Lee-Xieng, 2013). The arrangement of the facial muscles when defining an emotional category is ambiguous, and the context in which that expression is set may lead to changes in terms of the intensity and type of emotion perceived (Hassin, Aviezer, & Bentin, 2013). A theoretical model that integrates verbal context and facial expression in the understanding of interpretive processes is referred to as the constructionist approach to emotion (Barrett, 2011). This model considers that facial muscular movements provide simple information, with words providing the internal context for delimiting the facial meaning when the emotion is perceived (Barrett, Lindquist, & Gendron, 2007).

This relationship between verbal context and facial expression is explained on a theoretical level within the field of impression formation through the approach taken by Scherer, Scherer, Hall and Rosenthal (1977). These authors posit that judgements may be made about a personality through the processing of the verbal codes (verbal context) and non-verbal ones (facial expression) present in social interactions. These factors –verbal context and facial expression–, have been analysed jointly within the constructionist model (Barrett, 2011) in order to study their effect on the perception of emotions (e.g., Gordillo, Lozano, López, Pérez, Arana, & Mestas, 2013), although little is known about the role they play in impression formation.

The aim of this research was to analyse how the verbal context related to a person's life influence the judgements made about their personality (*emotional stability*, *friendliness*, *responsibility, sociability,creativity*) and emotionality (*valence and arousal*). The verbal context is expected to have a significant effect on the personality and emotionality dimensions analysed. This prediction was based on the importance that verbal aspects (verbal context) and non-verbal ones (facial expression) have on the judgements made on the perceived personality (Scherer et al., 1977), and which to date has not been verified due to the lack of a suitable methodology in the combination of these two factors.

METHOD

Participants
The sample consisted of 95 psychology students at National Autonomous University of Mexico (M_{age} = 20.97, SD_{age} = 3.15, 62 women).

Materials and procedure

Five words were used with a positive valence (family, hope, adventure, sex, optimism), and five with a negative valence (abuse, poverty, horror, nightmare, depression), taken from the normative study conducted by Redondo, Fraga, Comesaña and Perea (2005). All the words were similar in terms of their *arousal* levels. Use was also made of a woman's neutral mixed facial

expression (50% sadness–50% happiness), taken from Scrimin, Moscardino, Capello, Altoè and Axia (2009), whereby the greater ambiguity of a mixed expression would favour a possible bias arising from the effect of the verbal context. All the participants underwent the following stages:

Stage I: coding and assessment of the verbal context. The participants were shown a photo of a woman's face with a mixed expression of happiness and sadness, within a circle around which five positive or negative words were distributed. They were told in writing that the words described that person's life and that they should study the arrangement for one minute. They were then asked to rate the extent to which that person's life struck them as being positive or negative (very negative_1…… 9_very positive).

Stage II: assessment of the facial expression. Once the first score sheet had been handed in, the participants were asked to proceed to complete a second one. They were again shown the mixed facial expression, this time without the words, but with the following question: *"According to Mary's expression, I think she is/was a woman who is:"*:

HAPPINESS (valence) : Very little_1……9_A lot
NERVOUS (arousal): Very little_1……9_A lot
EMOTIONALLY STABLE: *Very little_1……9_A lot*
FRIENDLY: *Very little_1……9_A lot*
RESPONSIBLE: *Very little _1……9_ A lot;*
SOCIABLE*: Very little _1……9_ A lot*
CREATIVE*: Very little _1……9_ A lot*

Variables and analysis

Independent variables: Verbal context (VC: positive, negative): it was determined by means of words with a positive and negative emotional content referring to the life of a person whose perceived personality had to be assessed through their facial expression. The participants were randomly divided into two groups [group I: negative, $n = 46$; group II: positive, $n = 49$].

Dependent variables: 1. *Emotionality perceived through the facial expression.* The measurements were taken through two scales: Happiness (valence) and nervous (arousal). The scores ranged between one and nine (stage II). *2. Personality perceived through the facial expression.* The measurements were taken through five scales: emotional stability, friendliness, responsibility, sociability and creativity. The scores ranged between one and nine (stage II).

Analysis: A non-parametric analysis was conducted (Mann-Whitney U) with the VC factor (positive, negative) as independent variable, with the the perceived emotionality assessment (happiness and nervous) and the perceived personality assessment (emotional stability, friendliness, responsibility, sociability and creativity) constituting the dependent variables. The relationship between the variables was analyzed through a correlation analysis.

RESULTS

The results forthcoming from the Mann-Whitney U revealed that the VC had no significant effect on the perceived valence (z = -.691, *p* = .490, ES = .008); perceived arousal (z = -1.358, *p* = .174, ES = .16); perceived emotional stability (z = -1.854, *p* = .064, ES = .22); perceived friendliness (z =-.292 , *p* = .770, ES = .03); perceived responsibility (z = -.482, *p* = .630, ES = .06), and perceived creativity (z = -1.143, *p* = .253, ES = .13). However the VC factor had a significant effect on perceived sociability (z = -2.550, *p* = .011, ES = .30) (table 1).

Table 1. Descriptive statistics of the comparison groups: Negative Verbal Context (Negative_VC) and Positive Verbal Context (Postive_VC).

	Negative VC (n = 46)		Positive VC (n = 49)		Min -Max
	M	*DT*	*M*	*DT*	
Valence	4.48	1.82	4.73	1.87	1-8
Arousal	5.46	2.24	6.02	2.15	1-9
Stability	3.96	1.74	4.65	1.82	1-8
Friendliness	6.00	1.78	6.08	1.73	1-9
Responsibility	6.02	1.64	6.12	1.88	1-9
Sociability	4.54	1.97	5.69	1.95	1-9
Creativity	4.65	2.08	5.08	2.01	1-9

Correlational analysis revealed positive and strong correlation between valence assessment and all the personality assessments. On the other hand, about *arousal*, the correlation was with stability assessment. (Table 2).

Table 2. Bivariate correlations (Spearman rho) between the variables analyzed

	Stability	Friendliness	Responsibility	Sociability	Creativity
Valence	.525**	.347*	.365**	.394**	**.330***
Arousal	**-.296***	**-.197**	**-.082**	**-.114**	**-.153**

*Note. *p* < .005, **p* < .001 (bilateral).

Two groups were established, low (*n* = 13, assessment stage II: 1 y 2, sadness) and high (*n* = 15, assessment stage II: 1 y 2, hapinness) levels of valence, and low (*n* = 20, assessment stage II: 1, 2 y 3, calm) and high (*n* = 25, assessment stage II: 8, 9, activate) levels of arousal to analyze differences on personality assessment (table 3).

Table 3. Descriptive statistics of the comparison groups: Valence (Low_Val, High_Val) and Arousal (Low_Aro, High_Aro).

	Low_Val (n = 13)		High_Val (n = 15)		Min -Max	Low_Aro (n = 20)		High_Aro (n = 25)		Min - Max
	M	DT	M	DT		M	DT	M	DT	
Stability	2.91	1.94	5.53	1.73	1-8	5.05	2.01	3.68	1.93	1-8
Friendliness	4.23	2.13	6.60	1.35	1-9	6.70	1.38	5.60	1.98	1-9
Responsibility	4.23	1.83	7.07	1.71	1-9	6.35	1.69	5.76	2.09	1-9
Sociability	3.69	1.75	5.87	2.23	1-9	5.80	2.22	5.16	2.12	1-9
Creativiy	3.69	2.29	5.80	2.04	1-9	5.55	2.09	4.80	2.18	1-9

Valence had significant effect on the stability ($z = -3.40$, $p < .001$, ES = .64), friendliness ($z = -2.72$, $p = .007$, ES = -51), responsibility ($z = -3.41$, $p < .001$, ES = .64), sociability ($z = -2.41$, $p = .017$, ES = .46) and creativity ($z = -2.41$, $p = .017$, ES = .46). On the other hand, arousal had significant effect on the stability ($z = -2.37$, $p = .018$, ES = .35) and friendliness ($z = -2.05$, $p = .041$, ES = .30), but no had significant effect on responsibility ($z = -.78$, $p = .433$, ES = .12), sociability ($z = -1.04$, $p = .297$, ES = .16) and creativity ($z = -1.17$, $p = .242$, ES = .17).

DISCUSSION AND CONCLUSIONS

The results showed that the positive verbal context generated higher scores in the assessment of the dimensions of perceived sociability. The results obtained are consistent with the constructionist approach to emotion (Barrett et al., 2007) insofar that the use of complex stimuli, such as the verbal context, to contextualise the facial expression favours its impact on predominantly subjective variables rooted in experience, such as personality attributions. A personality would be constructed through a verbal context generated by the direct or deferred experience with the person producing the expression. The different studies that have addressed the influence the verbal context has on the perception of the facial expression use a word to delimit the emotional facial expression shown, obtaining a clear influence when determining the emotional category of that facial expression (e.g., Barrett et al., 2007; Lindquist, Barrett, Bliss-Moreau, & Russell, 2006). The context, as it has been studied in this research, evidences that the model's predictions are comprehensively fulfilled on variables that are constructed through experience, and with a markedly subjective nature, as are personality attributions.

These effects have been mediated by the facial expression, as the participants were asked to consider personality traits based on a mixed facial expression (happiness/sadness). The strong relation between assessment of emotion and personality was reflected in correlations analysis (see table 2) and analysis conducted with the valence and arousal as independent variables (see table 3)

The formation of personality-related impressions is a highly adaptive factor, due to its ability to predict behaviours (Bar, Neta, & Linz, 2006). Accordingly, the ability to draw personality traits from non-verbal codes, such as a facial expression, together with verbal codes, in terms of verbal context, would serve to predict future reactions. A recent paper has reported that contexts "rich"

in information give rise to more accurate judgements of personality (Wall, Taylor, Dixon, Conchie, & Ellis, 2013). Along these lines, and based on the findings reported here, it may be pointed out that the emotional content of the verbal context has a modulating effect on personality attributions.

Future research should explore major variations in the paradigm, such as the type of emotional expression used. This research used a single mixed expression of happiness and sadness. Yet what effect would expressions of anger or fear have on personality attributions? Also of interest would be their application to a clinical population, as well as using objective measures to analyse whether the perceiver's own personality is consistent with the personality attributions; in other words, whether there is a tendency to perceive in others some of our own personality traits. Likewise, monitoring the personality of the individual producing the facial expression would allow studying the accuracy of the attributions.

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AUTHOR INFORMATION

Fernando Gordillo is an Associate Professor of Psychology at Camilo José Cela University. His research interests include emotion, memory and decision making.

Lilia Mestas is an Associate Professor of Psychology at National Autonomous University of Mexico. Her research interests include the memory process.