

# An Italian Adaptation of the Emotion Regulation Questionnaire

Stefania Balzarotti<sup>1</sup>, Oliver P. John<sup>2</sup>, and James J. Gross<sup>3</sup>

<sup>1</sup>Laboratory of Communication Psychology, Catholic University, Milan, <sup>2</sup>Department of Psychology, University of California, Berkeley, CA, USA, <sup>3</sup>Department of Psychology, Stanford University, CA, USA

**Abstract.** The goal of this research was to develop and validate an Italian version of the Emotion Regulation Questionnaire (ERQ, Gross & John, 2003). In an Italian undergraduate sample ( $N = 416$ ), the two-scale ERQ structure was confirmed by confirmatory factor analysis, and each of the two scales (Reappraisal and Suppression) showed good internal consistency. The Italian ERQ also showed the predicted associations with measures of coping, affect, personality, and social functioning. Specifically, Reappraisal was positively correlated with positive reinterpretation, positive affect, and extraversion, and negatively correlated with negative affect and neuroticism. Suppression, by contrast, was negatively correlated with the venting of emotions, positive affect, extraversion, social support and social diversion. Taken together, these findings suggest that the Italian ERQ is a reliable and valid measure that inherits the nomological network of associations from the original version of the ERQ.

**Keywords:** emotion regulation, reappraisal, suppression, Italian

## Introduction

In the past two decades, there has been a dramatic increase in research on emotion regulation. This research has solidified our understanding that effective emotion regulation is crucial for diverse aspects of healthy adaptation ranging from affective functioning to social relations (Gross, 2001, 2007). Two emotion regulation strategies that have received particular attention are *cognitive reappraisal* (which consists of attempts to think about the situation so as to alter its meaning and emotional impact) and *expressive suppression* (which consists of attempts to inhibit or reduce ongoing emotion-expressive behavior) (Gross, 1998).

Based on an analysis of how emotions unfold over time, it has been argued that reappraisal and suppression have their primary impact at different points of the emotion-generative process (Gross, 2001; Gross & John, 2003). Specifically, reappraisal is an antecedent-focused strategy that acts before the complete activation of emotion response tendencies has taken place. It thus might be expected to modify the entire temporal course of the emotional response. Suppression is a response-focused strategy that intervenes once an emotion is already under way and after the response tendencies have already been fully generated. It thus might be expected to require repeated efforts to manage emotional responses as they continually arise, taxing the individual's resources.

This fundamental difference between reappraisal and suppression leads to the prediction that the two strategies should differ in their implications for multiple domains of psycho-

logical functioning, such as affect, cognition, and social interaction (for a review, see Gross, 2001; Gross & John, 2003). Consistent with this theoretical prediction, experimental findings showed that reappraisal leads to decreases in both behavioral and subjective signs of negative emotion, with no adverse consequences for either memory or emotional responsiveness in social interactions. By contrast, suppression leads to decreases in behavioral responses, but has no impact on the experience of negative emotion and leads to increased sympathetic activation of the cardiovascular and electrodermal physiological systems. Suppression also leads to other side effects such as impaired verbal memory and diminished responsiveness to social partners. Taken together, these findings suggest that reappraisal generally has more favorable consequences than suppression (Gross, 1998, 2001).

To enable the study of individual differences in reappraisal and suppression, Gross and John (2003) developed the Emotion Regulation Questionnaire (ERQ), which consists of two scales to measure reappraisal and suppression use. Confirmatory factor analyses identified this underlying two-factorial structure (Gross & John, 2003, Study 1); confirmatory factor analysis (CFA) also showed that – among the different models tested – the best fit was provided by an independence model, indicating that “reappraisal and suppression are two independent regulatory strategies that different individuals use to varying degrees” (John & Gross, 2004, p. 1312).

Studies employing the ERQ have shown that individual differences in emotion regulation are associated with differences in conceptually related measures of coping

strategies, mood management, inauthenticity, and rumination (Gross & John, 2003; Study 2). In particular, reappraisal is related to positive reinterpretation (Carver, Scheier, & Weintraub, 1989) and mood repair (Salovey, Mayer, Golman, Turvey, & Palfai, 1995), whereas suppression is related to less focusing emotion and venting, less attention to emotion, less clarity, and no repair efforts (John & Gross, 2004). Suppression is also associated with inauthenticity and rumination (Trapnell & Campbell, 1999). Finally, moderate correlations were found with the two broad personality traits most related to affect (Big Five Inventory, John & Srivastava, 1999): Reappraisal is negatively related to neuroticism, and suppression is negatively related to extraversion.

Studies employing the ERQ have also shown that reappraisal and suppression have different long-term implications for affective responding, social functioning, and well-being (Gross & John, 2003; Studies 3, 4, and 5). In particular, results have shown that reappraisal is related to greater experience of positive affect (PANAS, Watson, Clark, & Tellegen, 1988), better relationship closeness, social support (Carver et al., 1989), peer liking, and well-being (Ryff & Keyes, 1995). By contrast, suppression is related to less experience and expression of positive emotions, social sharing, social support and relationship closeness, and perceived well-being, but greater levels of negative affect and depressive symptoms.

## The Present Study

These results suggest that the ERQ is a reliable instrument to measure individual differences in reappraisal and suppression use. The ERQ has been translated into several languages (for the full set of current translations, see <http://www-psych.stanford.edu/~psyphy/resources.html>), generally showing acceptable internal consistency for both the Reappraisal and Suppression scales (Vuorela & Nummenmaa, 2004). Our goal here was to develop and validate an Italian version of the ERQ by testing whether the Italian ERQ would replicate prior findings concerning factorial structure and relations to other constructs.

First, we expected to confirm the two-factor model identified by the original American study in which the correlation between latent factors was set to zero.

Second, associations with conceptually related constructs were examined, and predictions were formulated according to theoretical assumptions (John & Gross, 2007) and prior findings (Gross & John, 2003). A first set of predictions concerned the relation with coping strategies that have conceptual overlap with reappraisal and suppression. We expected reappraisal to be positively related to reinterpretation: Carver et al. (1989) defined this strategy as “construing a stressful transaction in positive terms” involving the attempt to look for something good in what is happening and to learn from difficult ex-

periences. Suppression was expected to be negatively related to the venting of emotions; this strategy consists of being aware of one’s own emotional distress and letting it out. Despite these conceptual similarities, we expected moderate correlations since both reinterpretation and venting tap a broader set of processes: Reinterpretation measures optimism as well as learning from experience, whereas venting measures both experience and expression of distress.

A second set of predictions concerned affective functioning. Based on prior theorizing and empirical findings, we expected reappraisal to be positively associated with the experience of positive affect and negatively associated with the experience of negative affect, whereas we expected suppression to be positively associated with the experience of negative affect and negatively associated with the experience of positive affect. In a similar vein, we expected reappraisal and suppression to be related to the affectively saturated personality dimensions of extraversion and neuroticism (John & Srivastava, 1999). Because these are broad personality dimensions, we expected relations with our domain-specific measures of emotion regulation to be modest in size and evident only where the links between the measures were strongest. Specifically, we expected reappraisal to be negatively related to neuroticism and suppression to be negatively related to extraversion.

Finally, a third set of predictions concerned relations with measures of social functioning when coping with stressful situations: seeking out of social support (Carver et al., 1989) and social diversion (Endler & Parker, 1990). According to Carver et al. (1989), individuals may turn to other people to get emotional solace, sympathy, and understanding (emotional support) or to seek advice, information, and practical assistance (instrumental support). According to Endler and Parker (1990), social diversion may provide opportunities for diversion activities, escape, and avoidance of one’s own problems. We expected suppression to be negatively related to all measures of social functioning, whereas reappraisal was not expected to show any association (Gross & John, 2003).

## Materials and Method

### Participants

Participants were recruited from the State and Catholic Universities in Milan, Italy. Undergraduate students came from different faculties (Psychology, Computer Science, Economy, Motor Sciences). The combined sample consisted of 416 participants (age:  $M = 21.6$ ;  $SD = 3.01$ ; 68.5% women). All participants were Caucasian. A total of 182 participants completed a test-retest for the ERQ questionnaire after a period of 2 months. Participants were volunteers and received no credit for their participation in the study.

## Measures

The *Emotion Regulation Questionnaire* (ERQ; Gross & John, 2003) is a 10-item self report questionnaire which consists of two scales corresponding to two different emotion regulation strategies: *cognitive reappraisal* (6 items) and *expressive suppression* (4 items). Instructions ask the subject "some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions." The 10 items are rated on a 7-point-Likert scale from *strongly disagree* to *strongly agree*. The Italian translation of the ERQ was developed with a back-translation procedure by two independent translators. Discrepancies emerging from this procedure were discussed until they reached agreement on a common version. The American version of the ERQ demonstrated good internal consistency and a 2-month test-retest reliability of about .7 (Gross & John, 2003).

The *Coping Orientations to Problems Experienced* (COPE; Carver, Scheier, & Weintraub, 1989) is a 60-item questionnaire that assesses 15 different coping strategies. Items are rated on a 4-point Likert scale ranging from *I usually don't do this at all* to *I usually do this a lot*. The COPE was translated into Italian by Sica, Novara, Dorz, and Sanavio (1997) as well as Steca, Accardo, and Capanna (2001). In the present study we used the translation by Sica et al. (1997). Item and factor analyses were conducted on our dataset to check the internal consistency of the subscales used in this study: Positive Reinterpretation ( $\alpha = .70$ ), Venting ( $\alpha = .77$ ), Seeking Social Support for Instrumental Reasons ( $\alpha = .78$ ), and Seeking Social Support for Emotional Reasons ( $\alpha = .82$ ). Item-total correlations ranged from .36 to .56 for Positive Reinterpretation, from .35 to .67 for Venting, from .58 to .62 for Instrumental Support and from .42 to .78 for Emotional Support. A principal component factor analysis with Varimax rotation yielded a 12-factor structure close to that obtained by Sica et al. (1997) and Carver et al. (1989).

The *Positive and Negative Affect Schedule* (PANAS; Watson, Clark, & Tellegen, 1988) is the most frequently used instrument to assess positive and negative affect. It has been translated into several languages and has demonstrated robust psychometric properties (Italian validation by Terracciano, McCrae, & Costa, 2003). The PANAS is constituted by 20 positive and negative adjectives. In the general format of administration, subjects rate on a 5-point Likert scale how much they usually feel as indicated by the adjectives (e.g., active, determined, excited, nervous, scared, distressed, etc.). The Positive Affect scale ( $\alpha = .76$ ) reflects the level of pleasant engagement, whereas the Negative Affect scale ( $\alpha = .83$ ) reflects a general dimension of negative engagement and distress.

The *Italian Big Five Questionnaire* (BFQ; Caprara, Barbaranelli, & Borgogni, 1993) is a widely used and standardized 132-item personality inventory that assesses the basic dimensions of the Five Factor Model of personality: Extraversion/Energy, Agreeableness, Conscientiousness, Neuroticism (versus Emotional Stability)<sup>1</sup>, and Openness. Items are rated on a 5-point-Likert scale ranging from *absolutely false* to *absolutely true*. In our data set,  $\alpha$ s for the five scales ranged from .73 to .89.

The *Coping Inventory for Stressful Situations* (CISS; Endler & Parker, 1990) is a 48-item questionnaire assessing three coping dimensions: Task-Oriented coping, Emotion-Oriented coping, and Avoidance, which is constituted by two subscales, Social Diversion and Distraction. Subjects rate the 48 items on a 5-point-Likert scale from *not at all* to *very much* indicating how much they engage in each kind of activity when they encounter a difficult, upsetting, and stressful situation. Both Italian validations of the CISS (Pedrabissi & Santinello, 1994; Sirigatti, Stefanile, & Toselli, 1996) confirmed the original factorial structure. In this study, Social Diversion ( $\alpha = .80$ ) was employed as a measure of social functioning; the scale measures coping attempts that rely on friends and other people. Item-total correlations ranged from .73 to .80.

## Procedure

Participants completed the ERQ and the other instruments in large group sessions. Volunteers signed the consent form and then completed the questionnaires. The whole procedure lasted about 1 h. 182 participants were contacted once more after 2 months to complete the test-retest.

## Data Analysis

Data analysis was structured in three steps. First, psychometric properties of the Italian Emotion Regulation Questionnaire (ERQ-I) were investigated. Means, standard deviations and reliability coefficients were calculated, test-retest reliability was computed, and confirmatory factor analyses were conducted using EQS 6.1 (Bentler, 1995). Since univariate and multivariate kurtosis were found to be indicative of nonnormality by preliminary distribution analyses, the Satorra-Bentler scaled correction of ML was used, as it provides an adjusted, more robust measure of fit for nonnormal data (Hu, Bentler, & Kano, 1992). Second, we considered relations to other constructs by conducting multiple regression analyses (Gross & John, 2003) in which we tested the effects of Reappraisal and Suppression on each dependent variable. To test whether reappraisal and suppression might interact in these and subsequent analy-

<sup>1</sup> The Italian BFQ defines Emotional Stability as the opposite of Neuroticism (i.e., the tendency to experience negative affect). We use the term Neuroticism throughout the paper.

Table 1. Item-total correlation and confirmatory factor loadings for all items

Item #	English item original and Italian translation	Item-total $r$	Stand. Factor Loadings CFA
Reappraisal Items			
1	When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about. <i>Per sentirmi meglio (ad esempio, felice/contento/sollevato/di buon umore), cerco di guardare le cose da una prospettiva diversa.</i>	.61	.67
3	When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about. <i>Per non starci male (ad esempio, essere triste/in collera/di cattivo umore), cerco di guardare le cose da una prospettiva diversa.</i>	.67	.74
5	When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm. <i>Quando devo affrontare una situazione difficile, cerco di considerarla da una prospettiva che mi aiuti a stare calmo/a.</i>	.48	.52
7	When I want to feel more positive emotion, I change the way I'm thinking about the situation. <i>Cambiare il modo di pensare ad una situazione, mi aiuta a sentirmi meglio.</i>	.68	.77
8	I control my emotions by changing the way I think about the situation I'm in. <i>Cerco di controllare i miei sentimenti provando a cambiare il modo di considerare la situazione in cui mi trovo.</i>	.60	.67
10	When I want to feel less negative emotion, I change the way I'm thinking about the situation. <i>Cambiare il modo di pensare ad una situazione, mi aiuta a non starci male.</i>	.64	.74
		.61	.69
Suppression Items			
2	I keep my emotions to myself. <i>Tengo i miei sentimenti per me.</i>	.56	.70
4	When I am feeling positive emotions, I am careful not to express them. <i>Quando sono contento/felice, cerco di non farlo notare.</i>	.42	.53
6	I control my emotions by not expressing them. <i>Controllo le mie emozioni non esprimendole.</i>	.63	.82
9	When I am feeling negative emotions, I make sure not to express them. <i>Se provo sentimenti negativi, faccio attenzione a non esprimerli.</i>	.45	.53
		.51	.65

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ses, we initially performed moderated multiple regressions. However, replicating Gross and John's (2003) findings, none of the interactions approached significance. Moreover, reappraisal and suppression were not correlated; we therefore simply report correlations in the tables that follow, thus making our findings directly comparable to those reported by Gross and John (2003).

## Results

### Psychometric Properties and Factorial Structure

Cronbach's  $\alpha$  reliability coefficients were .84 for the Reappraisal scale and .72 for the Suppression scale. As Table 1 shows, item analysis confirmed internal consistency for both scales: Item-total correlations ranged from .48 to .68 for Reappraisal and from .42 to .63 for Suppression. As in Gross and John (2003), Reappraisal and Suppression were

not correlated ( $r = .08, ns$ ). Test-retest reliability across 2 months was .67 for Reappraisal and .71 for Suppression.

A  $t$ -test was performed to examine gender differences. As found by Gross and John (2003), males scored higher than females on the Suppression scale,  $t(414) = 7.92, p < .001$ . Cohen's  $d$  measure of effect size was .84 ( $.83 < d < 1.05$ ). Overall means were 3.82 ( $SD = 1.24$ ) for men and 2.82 ( $SD = 1.16$ ) for women. No significant difference was found for the Reappraisal scale,  $t(414) = .57, ns$ . Overall means were 4.31 ( $SD = 1.19$ ) for men and 4.38 ( $SD = 1.14$ ) for women.

In order to test how well the two-factor independence model of the original version of the ERQ fitted the Italian translation, we compared that model to the augmented model using CFA and following the procedures used by Gross and John (2003). We first tested the less parsimonious augmented model, namely, a two-factor model with the factor intercorrelation freely estimated. Goodness-of-fit indices were  $S-B\chi^2(34) = 132.14, p < .001$ ; CFI = .914; RMSEA = .084, and standardized regression weights (factor loadings) ranged from .52 to .82. The standardized cor-

relation between the two factors was estimated  $\Phi = .08$ , similar to the low correlation Gross and John (2003) reported. We then compared the augmented model to the more parsimonious and predicted independence model, where the latent factor correlation was set to 0. Results showed the following fit indices:  $S-B\chi^2(35) = 134.54$ ,  $p < .001$ ;  $CFI = .913$ ;  $RMSEA = .083$ . Most importantly, this simpler model did not show a worse fit than the more complex, augmented one, as shown by the direct comparison of these two nested models,  $\Delta\chi^2(1) = 2.4$ ,  $ns$ , just as Gross and John (2003) had found. Moreover, as in the original version, the absolute levels of the fit statistics suggest that the scales may not be strictly unidimensional because some of the items share a specific aspect (e.g., regulation of *negative* emotion) that is not shared with all the other items. Standardized regression weights for the final model are displayed in Table 1.

## Correlations with Other Constructs

Results are displayed in Table 2. As expected, Reappraisal was substantially positively related to the Positive Reinterpretation scale, whereas Suppression was substantially negatively related to Venting of emotions. However, Reappraisal was not highly related to Venting, and Suppression was not highly related to Positive Reinterpretation. These findings confirm the convergent and discriminant pattern of relations with these two coping constructs.

We next tested relations with measures of affective functioning. As expected, Reappraisal was related to greater positive and lesser negative emotion experience; Suppression showed the predicted negative link to Positive Affect

Table 2. Relations to other constructs

Scales	Reappraisal		Suppression	
	Italy ( <i>r</i> )	USA ( $\beta$ )	Italy ( <i>r</i> )	USA ( $\beta$ )
<i>Coping Styles</i>				
Reinterpretation	.45**	.43*	-.06	-.13*
Venting	-.08	-.01	-.48**	-.43*
<i>Affect</i>				
Positive Affect	.24**	.42*	-.15**	-.33*
Negative Affect	-.14**	-.51*	.04	.39*
<i>Big Five Traits</i>				
Extraversion	.14**	.11*	-.32**	-.41*
Neuroticism	-.23**	-.20*	-.20**	.03
Openness	.17**	.15*	-.16**	-.18*
Conscientiousness	.11*	.13*	-.07	-.14*
Agreeableness	.11*	.14*	-.18**	-.11*
<i>Social functioning</i>				
Instrumental Support	.11*	.10	-.29**	-.37*
Emotional Support	.02	.02	-.46**	-.48*
Social Diversion	.03	–	-.39**	–

Note: \* $p < .05$ , \*\* $p < .01$ .

but not the predicted positive relation to Negative Affect. We also tested whether these specific emotion regulation constructs were related to the much broader Big Five trait constructs. Table 2 shows that associations with the Big Five personality traits were modest in size, consistent with prior reports that Reappraisal and Suppression measures do not duplicate these broader personality dimensions. However, since Suppression showed no association to Neuroticism in the American study, we further examined the relationship found in the Italian sample ( $r = -.20$ ) using the two subscales that form the Emotional Stability vs. Neuroticism scale in the Italian Big Five Questionnaire: Reappraisal was related to high levels of both Emotion Control ( $r = .21$ ) and Impulse Control ( $r = .20$ ), whereas Suppression was significantly related only to high levels of Impulse Control ( $r = .28$ ).

Finally, we examined the relationships with social functioning. As predicted and found by Gross and John (2003), Reappraisal was not related to Seeking Social Support for Emotional Reasons nor to Social Diversion; our findings showed a small association with Seeking Social Support for Instrumental Reasons. Suppression was negatively related to all measures of social functioning and especially to Seeking Social Support for Emotional Reasons.

## Discussion

Our findings confirm the reliability, factor structure, and validity of the Italian adaptation of the Emotion Regulation Questionnaire (ERQ-I). With respect to reliability, internal consistency coefficients of both Reappraisal and Suppression scales were comparable to those obtained using the original version. In addition, 2-month test-retest reliability provided evidence for temporal stability of the Italian ERQ comparable to that of the original version. CFA produced a clear replication of the two factor structure found in Gross and John (2003). The predicted independence model fit just as well across all fit indices as the less parsimonious augmented model. This means, as Gross and John (2003) stated, that individuals who frequently use reappraisal were no more (or less) likely to use suppression than individuals who use reappraisal infrequently. Additional evidence of the validity of the ERQ-I came from the pattern of relations with coping and personality measures, as well as affective and social correlates.

## Reappraisal

Reappraisal was related to COPE Positive Reinterpretation. This means that individuals who commonly use reappraisal are more likely to cope with stressful events by looking for something good and by taking an optimistic attitude and reinterpreting what they find stressful. Reappraisal was also related to greater experience of positive affect and to

less experience of negative affect. This means that individuals using reappraisal are more likely to experience positive affect and less likely to experience negative affect than individuals who do not rely on this emotion regulation strategy. Relationships with broader personality dimensions were also investigated, and we found a significant positive correlation with Extraversion; as expected, the association was small. Concerning Neuroticism, Reappraisal showed small positive correlations with both Emotional Control and Impulse Control. In the social domain, Gross and John (2003) found that reappraisal was not related to social support. This study replicated these findings with one exception: Reappraisal was significantly related to the Seeking Social Support for Instrumental Reasons scale, although the correlation was modest and similar in size to that found by Gross and John (2003).

## Suppression

If reappraisal showed all the expected associations with related constructs, Suppression was characterized by a more complex pattern. As expected, Suppression was negatively related to coping through focusing on emotion and venting. Thus, suppressors – who habitually regulate their emotions by reducing what they express behaviorally – deal with stressful events by masking their feelings and avoiding the outward display of emotions.

In the affective domain, the predicted negative link to positive experience was replicated, but not the positive relationship to negative affect. This means that, in the Italian sample, suppressors were less likely to experience positive emotion (though no more likely to experience negative affect) than nonsuppressors. In the American sample, suppressors reported higher negative affect than individuals who habitually do not rely on this regulatory strategy (rather than unchanged levels as in experimental studies). John and Gross (2004) thus concluded that the use of suppression in daily life may lead to increasing levels of negative affect as a consequence of its relationship with inauthenticity. In our sample, however, suppression had no association with experience of negative emotions, indicating more similarity to the experimental findings. This result, which perhaps represents the most important discrepancy from the results obtained in the original American study, should be further explored in future studies.

With respect to personality traits, Suppression was weakly negatively related to Extraversion as in the original American study. Shyness and low extraversion are the more likely temperamental precursors for Suppression (John & Gross, 2004). However, in our dataset suppression was also related weakly to Neuroticism, whereas the American Suppression scale was not associated with this personality trait at all. In order to further investigate this finding, we considered the two subscales of Emotion and Impulse Control. The former is concerned with the experience of negative emotional states, such as anger, anxiety, and ten-

sion (John & Srivastava, 1999), whereas the latter deals with the ability to keep calm, maintain control, and avoid impulsive behavior. Results showed a pattern consistent with previous research, since Suppression was positively related only to the Impulse Control subscale, that is, with the ability to keep control of one's own behavior, but showed no relation to Emotion Control.

In the social domain, our findings corresponded to expectations: Suppression was negatively correlated to both COPE Social Support scales and to CISS Social Diversion scale.

## Limitations and Future Directions

This study provided evidence that the Italian version of the ERQ is a reliable and valid self-report measure for assessing reappraisal and suppression use. The two independent-factor structure that underlies the original ERQ version was replicated, as were gender differences in the use of suppression but not reappraisal. External correlates were also confirmed: Moderate associations were found between emotion regulation strategies on the one hand and coping strategies and personality traits on the other. Results concerning affective and social outcomes were consistent with those obtained by Gross and John (2003), although the use of suppression was not related to negative affect as expected.

The present research has two notable limitations. First, this study used a sample of college-aged research participants. Future studies will need to test the generalizability of these findings using samples representing a wider age range, including children and older adults. Second, this study used a relatively circumscribed set of measures of affective and social functioning. In future research, it will be important to broaden this set of measures.

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Stefania Balzarotti

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Laboratory of Communication Psychology  
Catholic University of the Sacred Heart  
Largo Gemelli, 1  
I-20123 Milano  
Italy  
Tel. +39 02 72345931  
Fax +39 02 72342280  
E-mail stefania.balzarotti@unicatt.it