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Italians' Social and Emotional Loneliness: The Results of Five Studies

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***Abstract*—**Subjective loneliness describes people who feel a disagreeable or unacceptable lack of meaningful social relationships, both at the quantitative and qualitative level. The studies to be presented tested an Italian 18-items self-report loneliness measure, that included items adapted from scales previously developed, namely a short version of the UCLA (Russell, Peplau and Cutrona, 1980), and the 11-items Loneliness scale by De Jong-Gierveld & Kamphuis (JGLS; 1985). The studies aimed at testing the developed scale and at verifying whether loneliness is better conceptualized as a unidimensional (so-called 'general loneliness') or a bidimensional construct, namely comprising the distinct facets of social and emotional loneliness. The loneliness questionnaire included 2 single-item criterion measures of sad mood, and social contact, and asked participants to supply information on a number of socio-demographic variables. Factorial analyses of responses obtained in two preliminary studies, with 59 and 143 Italian participants respectively, showed good factor loadings and subscale reliability and confirmed that perceived loneliness has clearly two components, a social and an emotional one, the latter measured by two subscales, a 7-item 'general' loneliness subscale derived from UCLA, and a 6–item 'emotional' scale included in the JGLS. Results further showed that type and amount of loneliness are related, negatively, to frequency of social contacts, and, positively, to sad mood. In a third study data were obtained from a nation-wide sample of 9.097 Italian subjects, 12 to about 70 year-olds, who filled the test on-line, on the Italian web site of a large-audience magazine, *Focus*. The results again confirmed the reliability of the component subscales, namely social, emotional, and 'general' loneliness, and showed that they were highly correlated with each other, especially the latter two. Loneliness scores were significantly predicted by sex, age, education level, sad mood and social contact, and, less so, by other variables – e.g., geographical area and profession. The scale validity was confirmed by the results of a fourth study, with elderly men and women (N 105) living at home or in residential care units. The three subscales were significantly related, among others, to depression, and to various measures of the extension of, and satisfaction with, social contacts with relatives and friends. Finally, a fifth study with 315 career-starters showed that social and emotional loneliness correlate with life satisfaction, and with measures of emotional intelligence. Altogether the results showed a good validity and reliability in the tested samples of the entire scale, and of its components.

***Keywords*—**Emotional loneliness, social loneliness, scale development and testing, life span and cultural differences.

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I. Introduction: Subjective Loneliness

SOCIAL relationships are at the core of our life. That is, we all need, and desire to, feel integrated in a net of subjectively meaningful relationships. The crucial of this human need is reflected, as it were, in the scientific literature, especially the psychological, sociological, and health ones. The last 30 years or so have in fact witnessed a growing amount of research on the (potential) subjective loneliness that individuals may feel, in connection with a variety of subjective and objective variables that are conceived as risk factors, mediating or directly causing loneliness, as detailed in the following.

Several studies have examined socio-demographic variables such as age, gender, marital status, education level, income and actual living arrangements to see whether different values of such variables, likely to define different life-circumstances pattern and problems, are meaningfully associated with loneliness. Obtained results showed, for instance, that loneliness is more frequent among lower income groups and among those with less education [1] - [3], among 'extreme' age groups, namely adolescents and elderly persons [1], [4], [5], among those who do not have a (supporting) partner, and/or a reasonable frequency of social contacts with family members, friends, neighbors and acquaintances, and/or live alone or in residential units [1], [5] - [12]. Boys and men might feel more lonely than girls and women; however, whether this result is found seems on the whole to be a function of quantity and quality of social contacts, in themselves typically higher for women, as well as of other variables such as age, depression, education, and so forth; see also below - e.g., [1], [4], [6], [8], [13].

Personological variables - e.g., personality traits, including how one evaluates the self, self-esteem, self-efficacy, affect dispositions and other aspects of emotional functioning, as well as values and judgements about one's own life - have also been linked to subjective loneliness. For example, loneliness is more likely in people who have lower self esteem [4], [14] [15]), higher anxiety levels, especially if the anxiety focuses on social encounters [4], [16], suffer from depression [1], [4], [5], [13], [17], [18], feel low satisfaction with their life [19], tend not to disclose their emotions and/or to silence themselves [4], [13], and have a dispositional tendency to negative affectivity [20]. Many such variables are relevant in that they tend to define whether a person has difficulties in establishing and keeping meaningful personal relationships.

Cognitive and physical functioning levels are likewise very relevant, again because of their implications, e,g., in terms of available resources. For example, loneliness may be increased

by physical impairment, especially in the elderly [21], by serious illness [6], as well as by subjective perceptions of poor overall health [7], [22]. Specific life circumstances, most notably death of a spouse or of a family member, retirement, immigration, and more generally a drastic change in one's social context (e.g., changing job, moving to a different town, getting divorced), all of which might imply that the person suffers emotional losses, and needs to form new emotional and social networks, are also likely to be linked to increased loneliness - e.g., [5], [6], [11], [18], [23].

Finally, loneliness may result from effects at the individual level of macro variables such as the recently occurring changes in the population age distribution, and in the structure of social relationships - see [24].

Felt loneliness is in turn a risk factor for a wide range of behavioral and health problems, including the likelihood of asocial behaviors, alcoholism, suicidal tendencies, overuse of health care services, heart disease, sleep disturbances, and diet problems - see [25] - [29].

In sum, very many studies support the hypothesis that several cognitive, affective, and behavioral aspects constitute possible determinants, or mediators, of felt loneliness. Considered either as a cause of one or more 'dysfunctions', or as a result of one or more (contingent or 'permanent') factors, loneliness, reflecting a person's desire to enjoy close contact with people, to be embedded in significant relationships is thus a very salient indicator of a person's well-being.

A. Centrality of the Loneliness Construct, and its Measurement

Loneliness is typically defined as the *subjective experience* of social isolation, as a disagreeable or unacceptable lack of desired meaningful social relationships - e.g., [28], [30] [31], both at the quantitative and qualitative level. Starting with Weiss [32], many researchers have argued that loneliness is *relational*, and has two facets: *emotional* loneliness, arising from the subjective evaluation that one misses (a) desired affectively-close relationship(s), and *social* loneliness, felt when the person perceives the lack of a supportive social network, i.e., close friends, friendly neighbors, people who will be available to talk with, give help when necessary, and so forth. In sum, to be alone and to feel lonely are quite distinct phenomena. The crucial hypothesis that being lonely differs from feeling lonely is supported both by anecdotal evidence, including our own experiences, and by several studies, including most of those quoted in the previous section, that showed that actual situational factors are typically less important than the subjective perception and interpretation of them, i.e., of how events are evaluated, a concept that is coherent with cognitive theories of emotions [33].

Needless to say, an important research goal is thus to be able to reliably measure subjective loneliness and its correlates. This goal has been often pursued, leading to the construction and testing of a number of loneliness scales, especially in English-speaking and North-European countries (for a discussion and comparative testing of two or more such scales see for instance [10], [15], [34], [35]; for a detailed and extensive review of most available scales, see [36]).

The focus of the studies to be reported here was on the development and testing of an Italian Loneliness Scale (ILS) that would constitute a short but adequate measure of subjective loneliness. The studies, furthermore, aimed to contribute to the still open debate on whether loneliness is better conceptualized and measured as a single dimension [28], or, as more and more scholars have acknowledged [9], [7], [15], [35], as a bidimensional construct, with two crucial facets, i.e., social and emotional loneliness.

Given that, as widely acknowledged in the literature, generalizations about the factorial structure of a construct, loneliness in this case, ought to be supported by studies that investigate a variety of social groups, e.g., different ages and cultures, the studies here reported further aimed to obtain results that would allow testing the loneliness construct in yet another culture, namely the Italian one, a culture that in many respects might be said to be somewhat representative of southern Mediterranean cultures.

II. The Development of an Italian Loneliness Scale (ILS)

Before describing the studies and their method, it is perhaps necessary to mention here that the Italian Loneliness Scale (ILS) here presented was constructed and preliminarily tested in the second half of 2002 [1]. At the time, to my knowledge, there was no available instrument to measure loneliness in Italian [2], and tested on the Italian population.

A. Scale Development

After a careful review of the available literature, an 18-item scale was constructed adapting items from two previously developed instruments, namely a short version of the widely used North-American unidimensional University of California Loneliness Scale (UCLA; [28], and the Dutch De Jong-Gierveld Loneliness Scale (JGLS [39], initially conceptualized as a unidimensional scale, but later re-conceptualized as a bi-dimensional one on the basis of further studies - e.g., [9]; see also the recent six-item bi-dimensional scale version by [7].

The Italian scale (see Table I) further included 2 single-item criterion measures devised ad hoc, namely (c1) *In the last 7*

[1] The construction of the scale was initially motivated by contingent reasons that however I immediately welcomed for their short- and long-term research implications The reasons were the following. A journalist, Amelia Beltramini, of the staff of the Italian version of a large-public monthly magazine, namely *Focus*, asked me for an interview on loneliness, and if I would provide a brief loneliness test for *Focus* readers (the test would appear in the context of a discussion of loneliness that would include the mentioned interview). Only after carrying out Study 1, did I agree to provide a loneliness test for *Focus* readers. I wish to thank here the magazine *Focus*, Italy, for putting the loneliness test on-line, and later giving me access to the online collected data, thanks especially to the work on the site and the data themselves done by GianMattia Bazzoli. In connection to the interview, I also wish to thank the researchers, quite a few, who kindly and promptly sent me their papers on loneliness back in 2002, making much easier my finding and referring to updated results in my interview and in my thinking on the subject.

[2] Reference [37] published in 2002 a study that used the Illinois Loneliness Questionnaire by [38].

days I felt unhappy, sad, and (c2) *In the last 7 days I have seen, or heard on the telephone, one or more of my friends*. These two items (not used in Study 1, 4 and 5, as detailed below), which on purpose referred to a brief time interval, were positioned as the last two in the scale.

The ILS thus included three loneliness subscales. More specifically, ILS included an Emotional and a Social subscale whose items were taken from the JGLS ([39], developed and tested in various studies in The Netherlands, i.e., in Europe (see also later developments and tests, in [7] [9] [30], and after consideration of the results obtained by [9], [11], [35], [40] as regards its psychometric properties, as well as on the basis of comparative results with regard to other loneliness scales (e.g., the UCLA). The Emotional loneliness subscale comprises six negative items that focus on emotional abandonment and missing companionship, such as *I miss having a really close friend*, and *I experience a general sense of emptiness* (see Table I). Social loneliness is instead measured by five positively phrased items that assess feelings of sociability and of having meaningful relationships; e.g., *There are plenty of people that I can lean on in case of trouble* (see Table I).

The General loneliness subscale was adapted from a 10-item version (see [34], [41]) of the University of California 20-item revised Loneliness Scale UCLA [28]. More specifically, in the Italian version this subscale was formed by 7 negatively-phrased items, that is, the items that [34], Oshagan and Allen (1992) found to be the most reliable ones from their analysis of the UCLA 10-item version (for summary results on these items see, for instance, [34] Oshagan and Allen's tables 1 and 2). The shorter UCLA version was furthermore chosen on the basis of the comparative results obtained both by [34] [35] as regards its psychometric properties in comparison to other loneliness scales. Examples of General loneliness items are: *I feel left out*, and *My social relations are superficial* (see Table I).

All the items that were taken from the above mentioned original scales were carefully translated. The words lonely or loneliness do not appear in any item.

After a careful consideration of the variety of original scale answer formats (e.g., 3 to 5 to 10 scale intervals for the JGLS, with a variety of labels, such as "I agree" versus "yes!"; see, for instance, [7], [35], [42]), of the results obtained in studies using the original scales, and considering that participants ought to be provided with clear, easily understandable response options, all ILS items were associated (except in Study 5, as detailed below) with the following four point answer scale: 1= never, 2 = rarely, 3 = often, 4 = always.

The 18 loneliness items were presented in the ILS in an order item (see Table I) that was meant to avoid response biases and response sets. That is, items of the three original loneliness subscales were mixed one with the other. For instance, "*I experience a general sense of emptiness*", an Emotional item, was followed by "*There is always someone that I can talk to about my day to day problems*", a Social loneliness item, in turn followed by "*I lack companionship"*, a General loneliness item. When present, the two criterion items closed the scale. Finally, in each study, participants were asked to answer a few socio-demographic questions (e.g., at least age, sex, education level).

B. Qualitative Pre-test

Given that the ILS was composed of subscales that had often been tested in previous studies, as reported above, only a qualitative pre-test of the scale was performed, especially with the aim to check clarity of item phrasing, and of answer options. The pre-test was conducted using the thinking-aloud procedure [43], [44], with eight participants, colleagues and friends of various educational and social background, who were asked to say aloud what they understood each item to mean, and how they selected this or that answer option.

The method and main results of 5 studies that tested the developed Italian Loneliness Scale[3] - reported in Table I – are discussed next.

III. Study 1. ILS Preliminary Test on a Purposive Sample

A. Subjects and Procedure

The ILS was first of all tested on a relatively small sample of 59 Italian adults (women 54%), distributed in three age groups (18-25 years: 37%, 26-45 years: 44%, 46-62 years: 19%; mean age 32,85, *sd* 12,19), who had completed at least 13 years of education (56%), or had had higher instruction, and lived in the north of Italy, in the Veneto region. Participants were recruited among, and with the help of, friends, neighbors, long-standing acquaintances and a few colleagues, and individually filled in a paper-and-pencil scale version.

They formed a purposive convenience sample in that the personal information that was available for most of them (the anonymity of their answers was nonetheless guaranteed in all respects) allowed us to categorize them as individuals who were socially and emotionally well functioning, well integrated in their community, or, vice versa, as people who were likely to suffer from loneliness, in general or in its social and/or emotional variants. This information, in other words,

[3] The Italian version of the ILS is provided here: e1 Provo un senso generale di vuoto; e6 Mi manca il fatto di avere un'amicizia profonda, intima; e13 Mi sento spesso rifiutato dagli altri; e14 Mi manca il piacere della compagnia di altre persone; e17 Mi pare che la mia cerchi di amici e conoscenze sia troppo limitata; e18 Mi manca il fatto di avere della gente intorno; s2 C'è sempre qualcuno con cui posso parlare dei miei problemi quotidiani; s7 Ci sono varie persone a cui posso rivolgermi se ho dei problemi; s9 C'è un numero sufficiente di persone alle quali mi sento vicino; s15 Posso rivolgermi ai miei amici ogni volta che ho bisogno di loro; s16 Ci sono varie persone su cui posso contare completamente; g3 Sento che mi manca la compagnia di altri; g4 Sento che non c'è nessuno a cui rivolgermi; g5 Mi sento tagliato fuori; g8 Sento che i miei rapporti con gli altri sono superficiali; g10 Sento che non c'è nessuno che mi conosce veramente; g11 Mi sento isolato rispetto agli altri; g12 Sento che ci sono persone intorno a me ma non con me; c19 Negli ultimi sette giorni mi sono sentito infelice, triste, scoraggiato; c20. Negli ultimi sette giorni ho visto o sentito al telefono uno o più dei miei amici.

See also home.fsw.vu.nl/tg.van.tilburg/manual_loneliness_scale_1999.html

TABLE I
THE ITALIAN LONELINESS SCALE ITEMS (ORDERED ACCORDING TO THEIR ORIGIN), AND MAIN RESULTS FROM FACTOR AND RELIABILITY ANALYSES OF THE THREE SUBSCALES IN STUDY 1, 2 AND 3

Subscales and their items	Study 1		Study 2		Study 3	
	Communalities	Loadings	Communalities	Loadings	Communalities	Loadings
s2. There is always someone that I can talk to about my day-to-day problems.	,662	,814	,576	,759	,534	,731
s7. There are plenty of people that I can lean on in case of trouble.	,561	,749	,699	,836	,702	,838
s9. There are enough people that I feel close to.	,359	,599	,569	,755	,589	,767
s15. I can call on my friends whenever I need them.	,591	,769	,659	,812	,635	,797
s16. There are many people that I can count on completely.	,431	,657	,720	,848	,706	,840
Social loneliness subscale	% variance 52,08 alpha 0,766		% variance 64,45 alpha 0,861		% variance 63,29 alpha 0,854	
e1. I experience a general sense of emptiness.	,296	,544	,642	,801	,391	,625
e 6. I miss having a really close friend.	,253	,503	,534	,731	,448	,669
e13. Often I feel rejected	,525	,725	,419	,648	,480	,693
e14. I miss the pleasure of company of others.	,580	,762	,679	,824	,645	,803
e17. I feel my circle of friends and acquaintances is too limited.	,303	,550	,458	,677	,523	,723
e18. I miss having people around.	,436	,660	,639	,799	,651	,807
Emotional loneliness subscale	% variance 39,87 alpha 0,690		% variance 56,17 alpha 0,842		% variance 52,29 alpha 0,815	
g3. I lack companionship.	,511	,715	,463	,681	,456	,675
g4. There is no one I can turn to.	,431	,657	,643	,802	,552	,743
g5. I feel left out.	,563	,751	,654	,809	,584	,764
g8. My social relations are superficial.	,251	,501	,521	,722	,479	,692
g10. No one really knows me well.	,305	,552	,461	,679	,443	,666
g11 I feel isolated from others.	,672	,820	,716	,846	,668	,817
g12. People are around me but not with me.	,546	,739	,648	,805	,603	,777
General loneliness subscale	% variance 46,84 alpha 0,804		% variance 58,67 alpha 0,881		% variance 54,07 alpha 0,857	

Legend

Item number refers to its scale order position in the Italian studies here reported. The item letter preceding the number refers to the original scale from which the item was adapted: Items *g*: UCLA 7-item General loneliness scale (see 34 Oshagan & Allen, 1992); Items *e*: De Jong-Gierveld Emotional loneliness subscale; Items *s*: De Jong-Gierveld Social loneliness subscale (scores to be reverted to indicate felt loneliness).

Answer scale: 1= never, 2 = rarely, 3 = often, 4 = always.

The reported Cronbach's Alpha values are based on standardized items.

constituted the basis for assigning participants to one of two values of a criterion variable that will be referred to as '*with problems* (*yes, no*)'.

B. Results

Participants' answers - preliminary results of this study were presented in 2004 by [45] - were subjected to confirmatory factorial analyses. That is, a separate factor analysis and related reliability analysis was performed for each subscale, using the principal component method.

The results (see Table I, Study 1 columns) confirmed the hypothesized three-scale structure. More specifically, each factor explained a good portion of the variance (between 40% and 50%), and Cronbach's standardized alpha values were quite acceptable, comprised between about 0,70 and 0,80. The subscale that so to speak fared the least well in comparison to the others was the Emotional loneliness one.

The mean scale scores (see Table II, Study 1 rows) showed that participants on the whole reported low degrees of loneliness, especially of its social component (mean score 3,21; high Social scores, given the positive content of the items, actually indicate *perceived social support*; vice versa low scores denote social loneliness). The correlations among the subscales (see Table II, Study 1 rows), with sex as a control variable, were all highly significant. The most interesting result was that the Emotional and the General components exhibited the highest correlation (*r* 0,72). As expected given that the Social subscale scores were not reversed, Social loneliness was negatively related to both the Emotional component and, more strongly so, the General one.

As mentioned above, most participants (83% of the sample) were categorized with respect to the '*with problems* (yes, no)' variable. Analyses of variance were performed on participants' scores on each subscale, with sex and 'with problems' as the independent variables. Given the small sample size, the information we had on age, profession, and level of instruction was not considered in the analyses. The results showed that participants who did have 'problems' reported greater loneliness than those who did not.

More specifically, perceived Social support was marginally lower in problem-participants than in their peers (respectively, M = 2,99, versus 3,28; F (*df* 45) 3,03 p. = 0,10). Emotional and General loneliness showed the opposite trend: problem-participants obtained respectively the following scores: Emotional 2,10, versus 1,67 for those without problems (F (*df* 45) 13,86 p. = 0,0001); General 2,33, versus 1,93 (F (*df* 45) 7,28 p. = 0,01). The 'with problems' by sex interaction was also significant for Emotional loneliness (F (*df* 45) 6,62 p. = 0,02), and marginally so for General loneliness F (*df* 45) 3,57 p. = 0,10). Mean scores showed that, in comparison to women without problems, women with-problems reported higher scores in both dimensions (Emotional: 2,35, versus 1,57; General: 2,59, versus 1,92). In both subscales, men did not instead differ according to whether they had problems or did not (Emotional mean scores 1,81, versus 1,70; General 2,04, versus 1,93). The analyses of variance results thus showed that the three subscales on the one hand did discriminate among participants who were characterized by different perceptions and life circumstances; on the other hand they did so to a different extent.

In conclusion, the results of Study 1, although they were obtained on a small purposive sample, were nonetheless encouraging in that they seemed to preliminarily confirm the validity of the used loneliness scale, as well as the hypothesized distinction between social and emotional loneliness – although the small sample size, and its nature, did not allow to test the relative merits of the unidimensional 7-item UCLA scale and of the bidimensional 11-item De Jong-Gierveld scale. Study 1 results further showed that felt loneliness correlated with important social and demographic variables, namely sex and 'having social isolation problems' or not. Study 1 thus on the whole supported using the developed Italian scale to assess loneliness in larger samples, and in relation to criterion indicators of wellbeing and social integration, in addition to standard sociodemographic variables. These aims characterized the studies to be presented next.

IV. Study 2. ILS in Motivated Respondents who Sent their Answers by Mail

A. Procedure

The developed ILS scale was published in the Italian edition of *Focus*, a monthly magazine with a large medium-to-high education-level audience, that presents news and discussions on a variety of socially and culturally relevant topics (science included); the magazine runs a much visited web site too (see www.focus.it). In the *Focus* version, which included the two control items earlier described on mood and social contacts, respondents specified their profession and province of residence in addition to sex, age, and years of education.

The ILS appeared in the January 2003 issue, in the context of a lengthy article (pp. 112-120) on loneliness by the journalist A. Beltramini, which included my comments on the topic. Just before it appeared in print, the magazine had accepted my proposal to present the test together with a request to readers to "help research" by sending me (at the University address) a photocopy of their test answers (readers were also informed that they could otherwise fill in the test on the magazine web site (41 www.focus.it/solitudine), getting their subscales scores automatically. The *Focus* on-line respondents sample will be considered in the next section, under the heading Study 3).

The results to be discussed now were obtained by a sample of *Focus* readers who did send a photocopy (or the actual magazine test page) of their answers. Readers in many cases sent with it brief comments, especially on loneliness, and in about two dozen cases sent a letter to me, at times quite lengthy, in which they talked very personally about their life and their feelings, often asking for help and/or advice. Another perhaps not unexpected result of the test being

published was the number of 'cries for help' that I received by phone calls, even at home. These aspects – taking the time to send the test by mail, the letters, and the phone calls - testified once more –if at all necessary- the salience that the loneliness topic had for the general public, at the same time supporting the magazine favorable attitude to scientific enterprises and its final decision to accept my unusual 'research proposal'.

It is important to underline that, although scale items never mentioned loneliness, the answer context of this study (as well as of Study 3, with *Focus* online respondents) explicitly pointed to it, thus possibly making people's answers somewhat different from what they would be in other contexts. It may be argued, however, that most people can easily guess the test topic from item content, despite the absence of explicit loneliness words.

B. Subjects

Participants to this study were 143 people (57% women) whom we might say were very motivated respondents in that they actually took the time and spent the money necessary to send their answers. (Of the people who did write to me, some, needless to say, had answered only a few scale items and were therefore not included in the sample here described.) The respondents, who lived in many different regions of Italy, had had 12,56 (*sd* 3,25) years of schooling on average; their age varied from 12 to 71 years, with a mean age of 37,02 (*sd* 13,26). After a careful inspection of the distribution of the age data, as well as on the basis of preliminary analyses of their loneliness scores, participants were subdivided into 4 age groups, taking into account both the frequency of respondents in each group and the need to keep as distinct those age groups that might be characterized by important life span differences. The age groups were the following: adolescents and very young adults (12-22 year-olds, 18,9%); young adults (23-33 year-olds, 19,6%); mature adults (34-45 year-olds, 37,8%); middle-age adults and older people (46-71 year-olds, 23,8%).

C. Results

As in Study 1, participants' answers were subjected to confirmatory factorial analyses for each subscale, using the principal component method, and related reliability analyses.

The results again confirmed the hypothesized three-scale structure (see Table I, Study 2 columns). Each factor explained a high portion of the variance (between 54% and 64%), and Cronbach's standardized alpha values were quite high, above 0,84. For each subscale all items, furthermore, had high loadings on the extracted factor. In sum, all subscales had good psychometric properties.

Mean scale scores (see Table II, Study 2 rows) showed that this respondent sample on the whole reported higher degrees of loneliness in comparison to Study 1 participants, that is, they reported higher emotional and general loneliness, and quite lower social support. This result is perhaps not surprising given that a fifth or so of the respondents, as reported in the Subjects section, indeed had answered *and sent* the test because they were motivated by their feeling very lonely, by an urgent need to talk with someone, to express their feelings.

The correlations among the subscales (Table II, Study 2 rows), with sex as a control variable, were very high and highly significant. The Emotional and the General components exhibited the highest correlation (above 0,86); Social loneliness was, as in Study 1, negatively related to the Emotional component and, more strongly so, the General one[4].

As regards the two criterion items, respondents on the average reported feeling sad rarely, and having heard or seen their friends from rarely to often (Table II, Study 2 rows). As expected, the two items were significantly and negatively correlated with each other: r -0,403, p. = 0,01. All three subscales correlated significantly and in the expected directions with both criterion items: 'mood' showed the highest association with Emotional loneliness, and the lowest with the Social one, whereas 'social contact' correlated, in the negative direction, the highest with General loneliness, and the lowest with the Emotional component.

To see whether the independent variables of sex, age (the mentioned 4 groups), and education level (recoded into 2 values: below or above 14 years of schooling) were associated with different degrees or kinds of loneliness, a multivariate repeated-measures analysis of variance was carried out, with the three loneliness subscales as the multivariate within-subjects variable. The results showed a multivariate effect of loneliness (F (*df* 2, 126) 5,74, p. = 0,01), and of the loneliness by age interaction (F (*df* 6, 254) 2,31, p. = 0,05), as well as a within-subjects effect of the loneliness by age by sex interaction (F (*df* 6, 254) 2,22, p. = 0,05). There were no significant between-subjects effects.

The mean scores on the three subscales of men and women subdivided in four age groups (see Fig. 1) showed that boys and men in the two youngest age groups reported much less (14-22 years) or less (23-33 years) Emotional and General loneliness than their female peers, and vice versa reported higher social support than their female peers.

This result may be interpreted in relation to gender roles, especially with respect to their implications for affective aspects in one's life - e.g., [46] - roles that we may expect to be more salient in adolescence and early adulthood than later on in life. That is, the males' traditional agentic role implies an inclination to pay little attention to feelings; *vice versa*, the interpersonal orientation typical of the female role implies a high sensitivity for feelings, with the result that women are more likely than men to feel lonely if anything 'goes wrong' in their social relationships, and actually more likely to feel dissatisfied with their relationships. The mentioned gender

[4] Because these results, similarly to those of Study1, indicated that the Emotional and General subscales overlapped very much in what they measured, a further factor analysis was performed on their pooled items, extracting a single factor. The results showed loadings comprised between 0,64 and 0,83 for its 13 items, and extremely high reliability (alpha 0,928). This Emotional-General compound scale explained 54% of the variance.

trend was completely reversed in the 'intermediate' age group (34 to 45 years), with women feeling altogether less lonely than men. Still relying on a gender role interpretation, this result can be explained by the fact that in this life period women often have more emotionally meaningful ties (with their children, with friends, etc.) than men do. Finally the sexes did not differ in the oldest age group (46 to 71 years): both men and women reported a reasonable amount of Social support, *but also* a relatively high amount of General loneliness; *vice versa* they reported a much lower Emotional loneliness level (a result that indicates that the two subscales, despite their very high correlation as reported above, do not measure the same feelings or experiences).

TABLE II
MEAN SCORES OF, AND CORRELATIONS AMONG, THE THREE LONELINESS (L) SUBSCALES, AND THE CRITERION ITEMS "I FELT UNHAPPY, SAD" AND "I HAVE SEEN OR HEARD MY FRIENDS" (IN THE LAST 7 DAYS)

	Mean (*sd*)	General	Emotional	Social
		Study 1		
General L.	2,03 (,54)			
Emotional L.	1,81 (,46)	,718		
Social L.	3,21 (,55)	-,599	-,422	
		Study 2		
General L.	2,41 (,73)			
Emotional L.	2,29 (,73)	,866		
Social L.	2,62 (,80)	-,748	-,701	
unhappy, sad	2,35 (1,06)	,653	,693	-,599
contact friends	2,66 (1,05)	-,595	-,517	,532
		Study 3		
General L.	2,19 (,61)			
Emotional L.	2,06 (,61)	,805		
Social L.	2,89 (,69)	-,714	-,654	
unhappy, sad	2,17 (,93)	,550	,536	-,410
contact friends	2,02 (,93)	-,411	-,420	,478

Legend
All correlations significant at p. = 0,01.

Somewhat higher General loneliness, in comparison to the Emotional one, was likewise reported by 23-33 year-olds, again by both men and women (but recall that women's loneliness scores were higher than men's). On the contrary, almost identical General and Emotional loneliness levels characterized both sexes in the youngest (14-22 year-olds) and the intermediate-age groups (34-45 year-olds). These trends were further confirmed and clarified by the results of a univariate analysis that was carried out for each subscale, Social loneliness was *not* in itself significantly associated to the age and sex variables. As Fig. 1 shows, Social loneliness tended to be higher for women than for men in 34-45 year-olds, but higher for men than for women among the youngest (14-22 year-olds). *Vice versa* the sex by age interaction was significant for General loneliness (F (*df* 3, 135) 2,96, p. = 0,05), and marginally significant for Emotional loneliness (F (*df* 3, 135) 2,09, p. = 0,10).

Results similar to those just reported were obtained in the analyses of the two criterion items, in that only 'mood' exhibited a marginally significant sex by age interaction (F (3, 135) 2,22, p. = 0,06), with women of the two younger groups reporting unhappy mood more than men, whereas women reported the same mood as men in the 34-45-year group, and a better mood than men when older. The social contact item showed a significant difference only between the youngest and the oldest age group, the former reporting, as we would expect - e.g., [47] - more frequent contacts than the latter.

In sum, the picture that emerged from the analysis of loneliness levels in 'motivated' respondents', and of a few variables likely to be associated with it, seems to point to a quite complex pattern of relationships. That is, reported loneliness varies according both to what loneliness facet one considers (e.g., Social or Emotional), and what 'type' of person – e.g., whether man or woman, young or older.

The complexity of the obtained picture, on the other hand, is coherent with most of the results obtained by the vast number of studies on loneliness available in the literature, exemplified by those that were quoted in the Introduction section. From this viewpoint, the Italian respondents here considered do not substantially differ from respondents living in other cultures such as the Netherlands or the United States.

The method and the main results of three further studies (that will be discussed in greater detail elsewhere) are briefly reported in the next sections.

V. STUDY 3. ILS IN A LARGE ON-LINE RESPONDENTS SAMPLE

The third study was conducted with Internet users who answered the ILS on line, at the web site www.focus.it/solitudine that the magazine *Focus* created in January 2003.

A. Subjects and Procedure

People filled in the test at the site during 5 months, from January 2003 and up to beginning of June 2003 - when, judging from the number of people who visited the page and answered the test, it seemed that a 'saturation point' had been reached.

An impressive total of 9.097 people (42,5% female) answered the test on line (plus 132, who however were living abroad and for this reason were excluded from the data analyses here presented). After a careful examination of obtained raw frequencies, the age, profession, and residence values that had been provided by respondents were recoded

Fig. 1 Mean scores of 3 Loneliness Subscales in Italian respondents, readers of the magazine *Focus* (Study 2)

TABLE III
PREDICTOR VARIABLES OF THREE LONELINESS SUBSCALE SCORES OF INTERNET-USER RESPONDENTS (STUDY 3; N 9.097). STANDARDIZED BETA COEFFICIENTS, ADJUSTED $R^{2,}$ AND F VALUES (REGRESSION METHOD: STEPWISE)

Dependent Variable	GENERAL L.		EMOTIONAL L.		SOCIAL L	
	Beta	t	Beta	t	Beta	t
PREDICTOR						
EMOTIONAL	,457[1]	56,87	-------	-------	-,195[3]	-17,743
SOCIAL	-,314[2]	-40,55	-,171[3]	-19,53	-------	-------
GENERAL	-------	-------	,515[1]	56,12	-,437[1]	-39,323
SAD MOOD last 7 days	,185[3]	26,61	,169[2]	22,61	-,032[7]	-3,643
CONTACTS last 7 days	-,051[4]	-7,60	-,105[4]	-14,58	,218[2]	27,244
SEX	*ns*	*ns*	-,057[5]	-8,84	-,078[4]	-10,770
AGE (9 groups)	-,023[5]	-3,82	-,042[6]	-5,75	-,055[5]	-6,531
EDUCATION (4 groups)	*ns*	*ns*	,014[7]	1,97	,041[6]	5,037
GEOGRAPHIC AREA (4 groups)	-,012[6]	-2,09	*ns*	*ns*	*ns*	*ns*
	R^2	F	R^2	F	R^2	F
	,683	3272,99 (*df* 6, 9090)	,642	2333,70 (*df* 7, 9089)	,536	1504,55 (*df* 7, 9096)

Legend

Beta's superscript number indicates the order of the predictors in the final equation model.

When entered as Predictors, the scores for each Loneliness scale were recoded into 4 level groups, according to the sample mean *m* and its standard deviation *sd* for each scale (i.e., 1 = 1 (minimum score) to 1 *sd*. below *m*; 2 = 1 *sd*. below *m*; 3= 1 *sd*. above m; 4= from 1 *sd*. above *m* to 4, maximum score).

All F values, and t tests, p. < 0,000 (except: Education for Emotional loneliness, and Area for General loneliness: both p. <0,05).

and grouped into new categories. Respondents' age ranged from 12-14 (5,3%) to 46-55 (5,3%) or older (1,6%). Most frequent respondent groups were adolescents (15-16: 7,3%, 17-18: 10%), and young or mature adults (e.g., 19-20 11,1%, 21-25 23,8%, 26-35 24,3%, 36-45 11,2%). Most respondents had finished junior (32,4%) or senior high school (55,7), 9,4% had a degree, whereas only 3,2% of the sample had had 5 years of education only. As regards the geographical distribution of on-line respondents, who, as requested, stated the province in which they lived, the recoding of these values into the four 'classic' areas as defined by the Italian National Institute of Statistics (see www.istat.it) showed that many lived in the North of Italy (West 33,8%, East 15,7%), 30,6% in the Center, and 19,9% in the South or in Sicilia and Sardegna. In sum, the sample, although not a probabilistic one, is stratified in a way that closely mirrors the Italian population of Internet users, and to some extent even the population at large (see www.istat.it).

B. Results

Participants' answers were subjected to confirmatory factorial analyses for each subscale, using the principal component method, and related reliability analyses. Factorial results confirmed the hypothesized scale structure (Table I, Study 3 columns) already found in Studies 1 and 2, and the high subscale reliability.

Mean scores (see Table II, Study 3 rows) showed that internet users on the average reported frequent Social support and low General and Emotional loneliness. Their criterion-item average scores (Table II, Study 3 rows) indicated relatively infrequent sad mood, and relatively frequent social contacts with friends. The two criterion items were correlated one with the other (*r* -0,248 p. = 0,01) and both correlated in the expected directions with the loneliness subscales (Table II, Study 3 rows). We might thus say that, on the whole, Internet users on the average reported low subjective loneliness levels. This result seems to question the supposedly 'bad' effect that Internet usage has on socio-emotional relationship, as well as giving indirect support to the hypothesis that (some of) those relationships, for at least a population sub-sample, might actually be initiated and/or kept through the net.

The results obtained from a repeated-measures analysis of variance showed a significant multivariate effect, as expected, of the within-subjects factor, i.e., loneliness as measured by the three subscales (F (*df* 2, 8905) 76,81 p. = 0,000), and several significant multivariate interactions with the considered variables (sex, age, education, and geographical area), in various combinations, including a significant five-way interaction ((F (*df* 2, 17812) 1,21 p. = 0,01). In multivariate between-subjects tests, only sex, and the five-way interaction were significant.

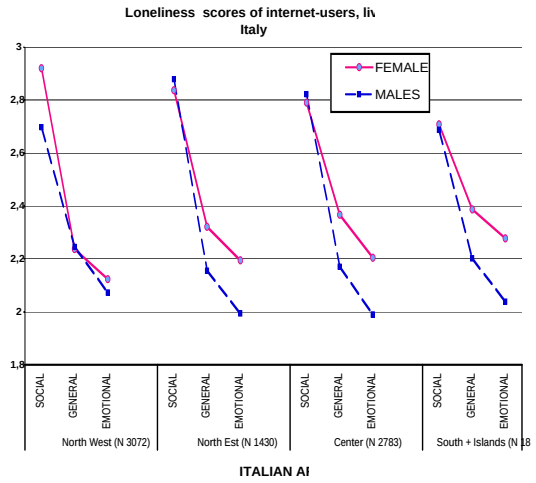

Fig. 2 Mean scores of 3 Loneliness subscales of men and women, internet-users, living in four geographical areas of Italy (Study 3)

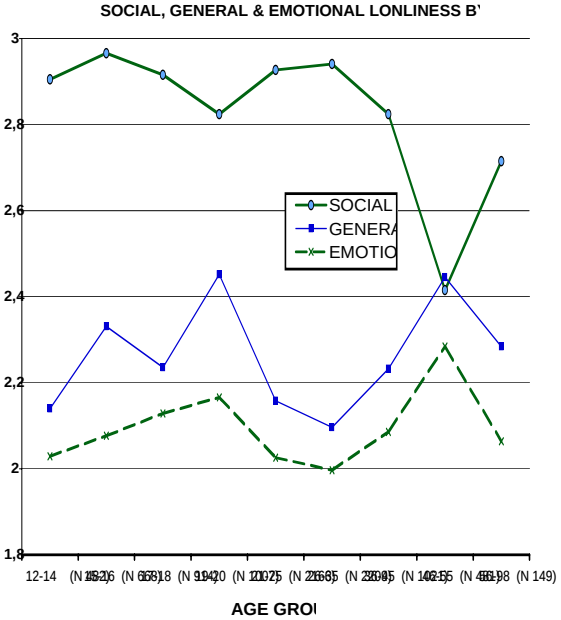

Fig. 3 Mean scores of 3 Loneliness Subscales of nine age-group internet-users (Study 3)

Mean scores showed, for instance, that women in general reported more General and Emotional loneliness than men, except in the North-West area where men and women did not differ, and where, conversely, women reported greater social support than men contrary to the other three areas where the sexes did not differ in the perceived support (see Fig. 2). Another illustrative example concerns age (see Fig. 3): in general Social support was relatively similar across ages, but was highest among 12-18 and 21-35 year-olds, and lowest for 46-55 year-olds. General and Emotional loneliness instead had peaks both among the young internet users (increasing from pre-adolescence and adolescence to the beginning of adulthood) and then again after 45 years of age, whereas it

dropped again in the oldest age group.

The mentioned significant associations - that cannot be fully detailed here - are best summarized by the results of three regression analyses that were carried out with each specific loneliness dimension in turn as the dependent variable; results are reported in Table III. On the whole, the regression results showed that there are both similarities and differences in the extent to which the three loneliness measures differentiated among respondents characterized by different values of the socio-demographic variables. For instance, whereas age was a predictor of all loneliness facets, sex predicted only Social support; General loneliness in turn was predicted by geographical area, but not by education level that instead predicted both Emotional and especially Social loneliness.

Both the 'mood' and the 'contacts with friends' criterion variables were significant predictors of the three loneliness measures. The results showed furthermore that General loneliness is a strong predictor of both Emotional and Social loneliness, whereas each of the latter two is relatively weak predictors of the other. In sum, General loneliness seems indeed to represent a global assessment of lonely feelings. On the other hand Emotional and Social loneliness measures are sensitive to (implications of) socio-demographic variations that are not captured by the General measure.

VI. Study 4. Loneliness in Elderly People

According to the literature, as mentioned in the Introduction, a group that might be especially at risk as regards subjective loneliness is that of elderly people. This study, carried out together with Marianna Zenoni [48], focused thus on this age group as a particularly relevant section of the population. One of the purposes of the study was to collect information on the association between loneliness and a few important criterion variables, such as level of depression, and extent and quality of social network, in order to further validate the loneliness scale here described.

A. Procedure, Subjects, and Measures

Elderly persons (N 105, 66% women), 78 year-old on average (*sd* 8,11), of mostly low education level (86% had 5 years of schooling), living at home (56%; 27% with a partner) or in residential care units, 67% with chronic illness, and with a reasonable social network (more than 5 people: 87%) were *individually interviewed* for this study.

Participants answered a variety of questions –details are reported in [48]. The most relevant measures (the alpha values for each measure obtained for this sample are reported below) included the number of contacts, and their frequency, with relatives (alpha 0,71), and the satisfaction of contacts with both relatives (alpha 0,71) and friends (alpha 0,76); see [1]). Participants also rated their depression, measured by the Geriatric Depression Scale, GDS [49]; alpha 0,86), and reported on their daily activities [50]; alpha 0,89). They finally answered the three General, Emotional, and Social loneliness subscales. The 'mood' and 'contact' criterion items were not used in this study because of the variety of similar measures that were employed, as already detailed.

B. Results

The obtained results confirmed once more that the three subscales were highly and significantly inter-related, especially, as found in the previous studies, the General and Emotional ones (General –Emotional *r* 0,805; General–Social *r* -0,641; Emotional-Social *r* -0,489; all correlations p. < 0,01).

The results, especially those obtained in three regression analyses (R^2 for each scale, with p. < 001: General 0,59; Emotional 0,50; Social 0,49), further supported the hypothesized relationships. The analyses in fact showed that loneliness, as measured by each subscale, was significantly related (with p. < .05 at least) to *depression* (General: ß 0,379; Emotional: ß 0,417; Social: ß -0,189), as well as to measures of *extension of social network* (General: ß -0,441; Emotional: ß -0,422; Social: ß 0,153), total *frequency of social contacts* (visits or phone calls; General: ß -0,254; Emotional: ß -0,236), *satisfaction for relationships with relatives* (General: ß -0,224). Loneliness was instead not significantly related to the satisfaction for relationships with friends.

Participants' sex was a predictor of Emotional loneliness only (ß -0,251), with men actually reporting higher scores than women (recall that in Study 2 sex was similarly an irrelevant variable as regarded the older age group).

Finally, participants' living circumstances (at home, versus in a residential care unit) predicted Social loneliness only (ß -0,237): people living in residential care units felt less social support than those living at home.

Altogether, the main results of Study 4, in addition to confirming the scale factorial structure and its reliability in the elderly, supported the concurrent validity of the developed scale, especially as regards its capacity to detect the association between loneliness with depression on the one hand, and with a variety of subjective as well as objective social aspects of people's life on the other hand.

TABLE IV
Explained Variance, Alpha Values, and Factor Loadings Range of Loneliness Subscales in Studies 4 and 5

Study	Subscales	% Variance	Standardized Alpha	Range of Factor Loadings
4 Elderly people	SOCIAL	54,18	,781	,555-,853
	GENERAL	48,48	,814	,480-,766
	EMOTIONAL	51,68	,810	,611-,812
5 Career starters	SOCIAL	61,72	,840	,587-,859
	EMOTIONAL	73,25	,908	,592-,826

VII. Study 5. ILS in Career Starters

As mentioned in the Introduction, a variety of personological variables seem to be significantly associated with experienced loneliness. The emotional competence (EC) or the emotional intelligence (EI) a person has might certainly be among the factors that influence how often and for what reasons a person feels lonely. Among the hypothesized components of both constructs are in fact such skills as the capacity to recognize as well as to understand one's and others' emotion, to regulate one's and others' emotions either to feel better and/or to safeguard an interpersonal relationship, and the capacity to rely on emotional information to solve various kinds of 'life problems' - e.g., [51] - [56]. For instance, as mentioned earlier, a tendency to appraise events emotionally in a positive rather than negative way, and disclosing one's feelings to others when appropriate, are associated with fewer or less intense lonely feelings than if these personal conditions do not hold. The last study to be reported now here concerned itself with the issues here briefly touched upon and aimed to test the extent to which loneliness is associated with emotional intelligence and with criterion measures not explored in the Studies 1-4 reported in the previous sections of the paper. The study, furthermore, allowed to check test-retest reliability.

A. Procedure, Subjects, and Measures

Two of the three loneliness subscales, namely the Social and the Emotional one (i.e., the De Jong-Gierveld scale[5]), were used in an European transnational research project on components of emotional intelligence (EI) and on their correlates, such as life satisfaction, frequency of felt positive and negative affect, and indeed loneliness - e.g., [59], [60].

The project focused on young people entering the job market. All subjects underwent an initial (time-1) assessment of EI and related variables. About half of all subjects, the 'experimental ones', in each participating country then underwent a self-administered EI training devised for this study [61], [62], that lasted 4-6 weeks on the average. All subjects were again assessed (time-2) about 6-8 weeks from the first assessment, using the same measures. In this study, to maintain homogeneity with the answer format of other employed measures, loneliness was measured on a 5-point answer scale (from 1 = false for me, to 5 = true for me). The 'mood' and 'contact' criterion items were not used in this study.

The results that will be reported here were obtained with a sub sample of 315 career-starters living in the North-East of Italy - see also [63], [64]. Only results directly relevant to the loneliness subscales will be reported here.

B. Results

The obtained results, that again confirmed the reliability of the two subscales (see Table IV, Study 5 rows), showed good test-retest stability for each scale (Social loneliness. *r* 0,74, Emotional loneliness *r*. 0,89, p. = 0,01).

As regards the association of loneliness with other relevant variables that were measured in this study, the results showed that career starters' loneliness, especially its Social facet, had significant correlations (in the expected direction, and mostly at both assessment times), with the following variables, measured through self-report scales each composed of several items: life satisfaction (measured by a scale developed by [65]; time-2 Social: *r* 0,50; time-2 Emotional: *r* 0,-23); felt positive affect (i.e., mean frequency of emotions such as joy and love: time-2 Social: *r* 0,32); awareness of one's own emotions (time-2 Social: *r* 0,21); lack of awareness of one's and others' emotions (time-2 Emotional: *r* -0,55); emotional expressive transparency (i.e., the extent to which one's own felt emotions are recognizable by others; time-2 Social: *r* ,33); optimism (Social time 2: *r* ,27).

Quite surprisingly, given the results obtained in the previously reported Studies 1-4, as well as most results available in the literature (e.g., de Jong Gierveld & van Tilburg 2006), Social loneliness (mean score, time-1: 4,03, *sd* 0,78) and Emotional loneliness (time-1 mean score 2,74, *sd* 1,23) were *not* correlated with each other for the North-Italian group of career starters.

In sum, the partial results of this study here reported confirmed in yet another kind of sample – i.e., a large sample of young graduates - that the Emotional and Social loneliness subscales are capable of differentiating individuals who are characterized by different values on a number of emotion-related variables (e.g., degree to which the person discloses her emotions; optimism), and in relation to criterion variables such as life satisfaction and felt *positive* affect. (The study further supported its main hypothesis, namely that emotional intelligence is significantly associated with well-being, and that it can be trained.)

VIII. Conclusion

Studies 1 to 5 were presented here mostly in an extremely concise form, reporting for each study (especially Studies 3-5) only a few of its main findings.

Nonetheless, the obtained reported results do lend support to the conclusion that the Italian Loneliness Scale (ILS), constructed mostly by adapting items taken from two well-known instruments, namely a short UCLA version and the De Jong-Gierveld Loneliness Scale, is a valid and reliable scale for measuring subjective perceptions of both social and emotional loneliness in various sections of the Italian population – i.e., in adolescents, as well as in young and mature adults, in older people, in people with low and high education level, and in people living in sociologically-different geographic areas of Italy.

The results furthermore indicated that the ILS is an adequate instrument for testing associations between loneliness and personological and socio-demographic variables.

As the results of each of the five studies showed, there is

[5] In the 5 studies here discussed, the JGLS Italian item phrasing was somewhat different from that used in other studies - i.e., [42], [57], [58].

actually a great overlap between the 'general' (UCLA) and the 'emotional' (JGLS) subscale. In future studies a researcher could thus use only one of these two subscales that measure the emotional component of loneliness rather than both, for instance in order to use a shorter loneliness measure (as it was done here in Study 5). However, the results also showed that the two subscales, to some extent at least, are differentially sensitive to variations in socio-demographic and personological variables, a finding that makes the choice more problematic. This overlap issue thus deserves further empirical testing.

Future research, as well as the results of ongoing studies, will shed more light on the properties of the ILS scale here presented and on its capacity to detect important differences among groups and individuals characterized by different values of relevant socio-demographic and personological variables.

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