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The Social Mentalities Scale: A new measure for assessing the interpersonal motivations underlying social relationships

Maurizio Brasini[a,*], Annalisa Tanzilli[b], Jessica Pistella[c], Daniela Gentile[b], Ivan Di Marco[b], Francesco Mancini[a], Vittorio Lingiardi[b], Roberto Baiocco[c]

[a] Department of Psychology, Telematic University of Rome "Guglielmo Marconi", Via Plinio, 44, 00193 Rome, Italy
[b] Department of Dynamic and Clinical Psychology, Faculty of Medicine and Psychology, Sapienza University of Rome, Via degli Apuli, 1, 00185 Rome, Italy
[c] Department of Developmental and Social Psychology, Faculty of Medicine and Psychology, Sapienza University of Rome, Via dei Marsi, 78, 00185 Rome, Italy

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ABSTRACT

The evolutionary perspective on human emotions and motivations posits that all interpersonal interactions are shaped by an array of social mentalities, dwelling on our species' bio-behavioral disposition to pursue some evolutionarily valuable social goals (i.e., interpersonal motivational systems). The paucity of valid and reliable measures of such mentalities has limited empirical research into how these processes play out in everyday social exchanges. The Social Mentalities Scale (SMS) was developed to evaluate patterns of cognition, affect and behavior from basic interpersonal motivational systems. Two samples of young adults (18–35 years old) completed distinct instrument packets including the SMS and self-report questionnaires. An exploratory factor analysis (740 participants) revealed a six-factor solution: insecurity, prosociality, agonism, belongingness, sexuality, and playfulness. A confirmatory factor analysis (815 participants) supported the goodness of this factor model. Moreover, the SMS's subscales were correlated to specific dimensions of individual psychological functioning in a theoretically coherent way. These results supported the SMS's validity and reliability in assessing the complex and multifaceted portrait of social mentalities that inform human interactions and personality. The SMS is a user-friendly and easy to complete measure that promises to provide a significant contribution in a potentially wide range of clinical and research contexts.

1. Introduction

In the nearly 150 years since Charles Darwin published his seminal book, *The Expression of the Emotions in Man and Animals* (Darwin, 1872), researchers in many domains (e.g., ethology, neurobiology, anthropology, social psychology) have searched for the evolutionary basis for human relatedness through our heritage of shared emotions (Davis & Panksepp, 2018; Ekman, 1973, 2003; Panksepp, 1998). In particular, their work has contributed to the identification of adaptive tendencies toward attachment and proximity seeking (Bowlby, 1969;Mikulincer & Shaver, 2007), parenting and breeding (George & Solomon, 2008; Heard & Lake, 1988; Hrdy, 2009, 2014; Solomon & George, 1998), kinship (Axelrod & Hamilton, 1981; Bourke, 2014; Bowles & Gintis, 2011; Lieberman, Tooby, & Cosmides, 2007), group bonding (Baumeister & Leary, 1995; Cacioppo & Patrick, 2009; Dunbar, 2009), cooperation (Boyd, Richerson, & Henrich, 2011; de Waal, 2009; Tomasello, 1999, 2009; Warneken & Tomasello, 2006, 2009), competition (Boehm, 1999, 2012; Choi & Bowles, 2007; de Waal, 1982; Gilbert, 1989), mating (Archer & Lloyd, 2002; Buss, 1995), pair bonding Lieberman et al., 2007)(Chapais, 2008; Dunbar, 2008; Hazan & Shaver, 1987), and social play and enjoyment (Dunbar, 2012; Graham & Burkhardt, 2010; Scott & Panksepp, 2003; Trevarthen, 2017). Dwelling in this evolutionary background, the multimotivational theoretical approaches to human relatedness have converged on the idea that human interactions are oriented by a finite number of psychobiological systems, whose goals are innate and guided by the evolution of the species, but whose functioning is shaped by interpersonal experiences (Bowlby, 1988; Gilbert, 1989; Lichtenberg, Lachmann, & Fosshage, 1992; Liotti, 1994/2005, 2001; Panksepp, 1998; Panksepp & Biven, 2012).

As Gilbert (1989, 2005, 2014) noted, interpersonal motivational systems play a fundamental role in organizing our social life by shaping

* Corresponding author at: Viale Castro Pretorio, 116, 00185 Rome, Italy.
E-mail addresses: m.brasini@unimarconi.it (M. Brasini), annalisa.tanzilli@uniroma1.it (A. Tanzilli), jessica.pistella@uniroma1.it (J. Pistella), daniela.gentile@uniroma1.it (D. Gentile), dimarco.1581414@studenti.uniroma1.it (I. Di Marco), f.mancini@unimarconi.it (F. Mancini), vittorio.lingiardi@uniroma1.it (V. Lingiardi), roberto.baiocco@uniroma1.it (R. Baiocco).

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a set of *social mentalities*. Each social mentality pursues a different interpersonal purpose and prepares individuals for specific communicative and relational displays. On this basis, motivational systems may be considered domain-specific computational modules (Fodor, 1983), insofar as they are selected by the evolutionary process, and each one aims at solving a particular class of adaptive problems (Barkow, Cosmides, & Tooby, 1992). However, the general architecture of these systems allows for what Cosmides and Tooby (2002) called "improvisational intelligence" (p.146)—namely, the ability to improvise solutions to novel and domain-general problems. Whereas the *massive modularity* perspective (Carruthers, 2006; Cosmides & Tooby, 2002; Sperber, 1996, 2001) posits that these tasks are achieved thanks to an ever-increasing and elaborate set of evolutionarily specialized computational adaptations, the multimotivational perspective holds that a small number of modules have first evolved to solve domain-specific goals (e.g., mating, fostering offspring survival, etc.), but these have subsequently been adapted into more domain-general functions (Fodor, 2000; Gerrans, 2002; Prinz, 2006). Gilbert offered a clarifying example of this shift toward a partially demodularized view of social motives, by considering compassion a social mentality (Gilbert, 2015, 2017). According to Gilbert, compassion is rooted in ancient mechanisms and processes, and facilitates caring for offspring, which progressively expanded to include non-kin, strangers, and even non-humans: "social mentalities like caring and compassion are not as stimulus-bound or modularized as they are for many non-humans (…) Human cognitive abilities enable us to understand the principles, functions, and nature of caring; anticipate the effects of caring; and work out complex (or wise) ways of enacting caring" (Gilbert, 2015, p. 244).

Of note, this definition of social mentality is highly consistent with the *social brain hypothesis* (Dunbar, 1998, 2008; Dunbar & Shultz, 2007), according to which our species heavily relies on hyper-sociality for adaptive surviving and thriving. This hyper-sociality imposes extraordinary cognitive demands that create the conditions for large-scale social interactions, non-kin, and unconditional prosociality (Bowles & Gintis, 2011; Brosnan & de Waal, 2002; de Waal, 2008, 2009; Henrich & Henrich, 2006), as well as for shared intentionality and cultural evolution (Boyd & Richerson, 2005; Cortina, 2017; Cortina & Liotti, 2014; Tomasello, 2008, 2014; Tomasello, Carpenter, & Call, 2005; Wilson, 2012).

In this context, a deep and careful exploration of motivational systems and their complex dynamics may help to shed light on individuals' intersubjective experiences and the maladaptive interpersonal interactions that characterize all relationships, including the patient–therapist relationship (e.g., Cortina & Liotti, 2010; Gilbert & Bailey, 2014). Such an exploration may also generate insight into the role played by basic social motives in determining personality and individual differences. Recent advances in affective and personality neuroscience suggest that these built-in survival tools may comprise a "roadmap to study the biological basis of human personality" (Montag & Davis, 2018, p. 3). Indeed, reflecting on the significant literature on the role of attachment in shaping personality, Liotti and Gilbert (2011) concluded that: "personality development creates individualized patterns of activity of different social motivational systems" (p. 11). In the domain of social psychology, evolutionarily grounded fundamental social motives (Kenrick, Griskevicius, Neuberg, & Schaller, 2010) are increasingly considered "a powerful lens through which to examine individual differences" (Neel, Kenrick, White, & Neuberg, 2016, p. 887). Dweck recently proposed a unified theory of motivation, personality, and development, according to which: "understanding motivation is the key to understanding personality and development" (Dweck, 2017, p. 689). Dweck (2017) claimed that motivation derives from basic human needs; as individuals pursue those needs, they develop recurrent patterns of beliefs, emotions, and action, akin to Bowlby's "internal working models" (Bowlby, 1969), which lie at the core of personality. In our view, social mentalities may reflect such recurrent representational patterns aimed at fulfilling basic needs endowed with adaptive value.

To date, there have been few empirical investigations of emotional/motivational systems. Systematic research in this field is hindered by two distinct but interrelated problems: (a) the inherent difficulty of conceiving a univocal and comprehensive conceptual and operational definition of these systems, and (b) the paucity of measures able to capture and assess their expression in a valid and reliable manner (Fassone et al., 2016). To our knowledge, only two instruments exist to evaluate emotional and motivational systems: the Affective Neuroscience Personality Scales (ANPS; Davis, Panksepp, & Normansell, 2003; Davis & Panksepp, 2018) and the Assessing Interpersonal Motivations in Transcripts (AIMIT; Italian Group for the Study of Interpersonal Motivation, 2008). Although both of these instruments rely on a broadly shared evolutionary theory of human emotion and motivation, they have notable differences in terms of theory and method. On the one hand, the ANPS is a self-administered questionnaire based on Panksepp's (1998) affective neuroscience theory, which does not specifically focus on social/interpersonal motivational systems. On the other hand, the AIMIT is a micro-analytic method for detecting linguistic indicators of interpersonal motivational processes; it is applied to clinical dialogue through an "expert" evaluation of transcripts (Fassone et al., 2012, 2016).

The AIMIT method was developed on the basis of Liotti's theoretical framework (Cortina & Liotti, 2010, 2014). It is used to assess respondents' activity in seven motivational systems, which overlap with those proposed by Lichtenberg and Gilbert: (1) *attachment* describes relational episodes in which an individual feels vulnerable and needy and seeks help and support from a figure capable of providing care, protection, and security; (2) *caregiving* describes relational situations in which an individual experiences empathy and concern over another fragile individual, to whom they provide comfort, relief, and emotional closeness; (3) *rank competition* describes relational episodes in which an individual tries to overpower others by establishing rank or hierarchy, competing for resources, displaying dominance, and aiming to maintain dominance, as well as situations in which the individual surrenders and submits to an opponent or, on the contrary, tries to challenge and resist dominance; (4) *sexuality* describes relational episodes in which an individual feels sexual attraction or behaves sexually or seductive toward another individual; (5) *peer cooperation* describes relational situations in which an individual shares intentions and directs efforts to achieve common goals on an egalitarian basis with others. According to Liotti's theoretical perspective, this latter system represents the apex of our complex and evolutionarily advanced social organization, and it is linked to two more systems: (6) *affiliation to a social group*, and (7) *social play*, which are viewed as extensions of the cooperative motivational system (Cortina & Liotti, 2010).

The AIMIT has been shown to demonstrate good validity and reliability (Fassone et al., 2012, 2016). Moreover, several studies have suggested associations between the AIMIT's motivational systems and specific psychological dimensions (e.g., attachment, metacognition), particularly within therapeutic narratives (Farina et al., 2017; Monticelli, Imperatori, Carcione, Pedone, & Farina, 2018). However, because the AIMIT is a labor-intensive and time-consuming procedure that requires extensive training to administer reliably, it has limited empirical applicability.

Several years after the publication of the AIMIT, a group of Liotti's research partners adapted the measure into the Social Mentalities Scale (SMS; Brasini et al., 2015)—a self-report scale designed to assess patterns of cognition, affect, and behavior generated by basic interpersonal motivational systems (see Appendix B). The initial set of SMS items was formulated by deconstructing and reformulating the AIMIT verbal indicators of all seven interpersonal motivational systems (including affiliation and social play). The final items were confirmed by a group of four AIMIT experts through a process of consensual qualitative research (CQR; Blasi & Hill, 2015; Hill, 2012; Schielke, Fishman, Osatuke, & Stiles, 2009). The items were then organized into seven dimensions,

with each describing a pattern of affect and action that orients relational exchanges according to a specific social motive. Each dimension of the SMS corresponds to what Liotti and Gilbert (2011) defined as a *social mentality*: "a loose description of how specific motivations (to form certain types of social relationship) direct attention appropriately, recruit relevant cognitive processing and guide emotions and behavioural outputs" (p. 14). This definition guided the experts in adapting the AIMIT indicators to the final SMS (Brasini et al., 2015).

The work was carried out in two main phases: first, each expert was asked to produce a new and simplified set of items from the initial set of AIMIT indicators. Following this, each item was analyzed in a group discussion, during which items were rejected, approved, or modified. The final set of items comprised all of the items that were consensually approved by the four experts. Moreover, the content validity of the SMS was verified by testing the agreement of 170 non-specialist raters who were asked to identify specific motivational systems from utterances within clinical material, using both AIMIT indicators and SMS items. Agreement (K values > 0.80) for all SMS items was optimal (Brasini et al., 2015).

Since no extensive and controlled validation study has been carried out for this measure, the present study intended to fill this gap. Specifically, we aimed at: (a) identifying the SMS factor structure and testing the reliability of its subscales, in terms of internal consistency; and (b) verifying the SMS's validity. We hypothesized good levels of convergence between SMS subscales and specific dimensions of individual psychological functioning associated with interpersonal motivational systems.

2. Study 1: SMS factor structure and reliability

Study 1 examined the factor structure and reliability of the SMS, hypothesizing that SMS dimensions would be strongly related to AIMIT motivational systems.

2.1. Method

2.1.1. Participant sampling procedure

Participants were recruited using the *snowball* sampling technique. Individuals were approached via advertisements posted on websites and social networks, directly via email, and via an online link to the survey (hosted on SurveyMonkey). Participation was voluntary and anonymous. All respondents were young adults aged 18–35 years. In Study 1, participants were asked to provide demographic information and to complete all 92 items of the SMS. In total, 97% of the questionnaires were completed. Informed consent was obtained from all respondents. The research protocol (including Study 2; see Section 3) was approved by the Ethical Commission of the [institution name blinded for review].

2.1.2. Participants

The sample for Study 1 consisted of 740 participants, including 437 (59.1%) women and 303 (40.9%) men, with an average age of 24 years (SD = 3.39, range = 18–35). The population was predominantly Italian (N = 723; 97.7%), and the general level of education was high, with 41% of participants having at least a university degree and 45% having completed secondary school.

2.1.3. Measures

2.1.3.1. Background Questionnaire. A background questionnaire was administered to participants to collect general demographic information (i.e., age, gender, nationality, level of education).

2.1.3.2. Social Mentalities Scale. The SMS (Brasini et al., 2015) is a self-report questionnaire that assesses the cognitive, affective, and behavioral patterns linked to motivational systems that modulate social relationships. It is grounded in Liotti's theoretical model and derived from the AIMIT (Fassone et al., 2012, 2016; Italian Group for the Study of Interpersonal Motivation, 2008). The SMS consists of 92 items, which are rated on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*very often*). The items describe a wide range of feelings and action tendencies that participants may have experienced during the past 4 weeks, and that characterize the social mentalities rooted in the seven motivational systems described in the AIMIT manual (see Appendix B).

2.1.4. Statistical analyses

The statistical analyses were performed using SPSS 22 for Windows (IBM, Armonk, NY). First, we ran an exploratory factor analysis (EFA) to identify the SMS factor structure. We then conducted a principal axis factoring (PAF) extraction with promax rotation on the sample data (N = 740). We tested the adequacy of the data for factor analysis using the Kaiser-Meyer-Olkin (KMO) score and Bartlett's test of sphericity. To determine the optimal number of factors to retain and rotate, we considered Kaiser's criteria eigenvalues > 1, the scree plot, the percentage of variance accounted for by the factor solution, and interpretability. To maximize the internal consistency of factors, we included items that loaded $\geq |0.30|$ on one factor and $\leq |0.30|$ on all other factors. Finally, we calculated Cronbach's alpha reliability coefficients to verify the internal consistency of the SMS subscales.

2.2. Results

2.2.1. Exploratory factor analysis and reliability

EFA was conducted on the data provided by the 740 participants. The KMO (Tabachnick & Fidell, 2007) score of 0.92 and Bartlett's test of sphericity χ^2 (4186) = 32,883.18, $p < .001$, confirmed the sample's adequacy for factor analysis. The PAF revealed a six-factor solution that provided the best fit and represented the most parsimonious and empirically grounded factor structure with great theoretical consistency. It accounted for approximately 45% of the variance and included six factors well marked by at least six items, each suggesting a stable factor structure (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

Table 1 shows the SMS factor structure and factor loadings on its six factors: (a) insecurity, (b) prosociality, (c) agonism, (d) belongingness, (e) sexuality, and (f) playfulness. Cronbach's alphas for the SMS subscales indicated excellent levels of reliability, with coefficients ranging from 0.82 to 0.92.

The *insecurity* factor (18 items) indicates feelings and action tendencies related to distress, loneliness, vulnerability, and neediness (attachment system), as well as to submissiveness, self-criticism, self-devaluation, and shame (submissive ranking system). The *prosociality* factor (18 items) describes a tendency toward compassion, protection, and concern over others' suffering (caregiving system), as well as openness and commitment to others (peer cooperation). The *agonism* factor (13 items) indicates feelings, emotions, thoughts, and behaviors of supremacy/dominance (e.g., feeling superior to, criticizing, and devaluating others), as well as challenge and rebellion against others (ranking system). The *belongingness* factor (12 items) describes feelings, thoughts, and behaviors related to the experience of feeling like part of a group and taking part in the group's life and activities (affiliation system), as well as a sense of fellowship, sharing, and communality (peer cooperation system). The *sexuality* factor (6 items) includes feelings, emotions, thoughts, and behaviors related to sexual attraction and desire (sexual system). Finally, the *playfulness* factor (8 items) describes an ironic, humorous, light-hearted, and imaginative attitude (play system).

3. Study 2: factorial replication and convergent validity

Study 2 investigated the associations between SMS dimensions and other measures, in order to identify similar constructs. Notably, we hypothesized that: (1) insecurity would be positively related to an anxious attachment style, submissive behavior, and painful emotions of

Table 1
Factor structure of the Social Mentalities Scale and internal consistency of its subscales (N = 740).

Factors and items[a]	λ					
Factor 1: *Insecurity*						
Feeling inferior or of little value	**0.80**	−0.09	−0.26	0.02	−0.01	0.01
Feeling insecure, fragile, or vulnerable	**0.80**	0.03	−0.25	0.01	0.06	−0.05
Feeling lonely or abandoned	**0.79**	−0.11	0.04	−0.10	0.02	0.03
Being self-critical	**0.73**	0.03	−0.12	0.03	0.04	−0.08
Suffering (either physically or emotionally)	**0.72**	0.05	−0.01	−0.08	0.03	0.04
Feeling defeated or a like loser	**0.71**	−0.03	0.03	0.06	−0.03	−0.09
Feeling ashamed	**0.69**	−0.16	0.05	0.11	−0.03	0.01
Feeling ignored or neglected by someone	**0.67**	−0.06	0.14	−0.03	−0.06	0.07
Trying to hide your discomfort	**0.61**	0.01	0.01	−0.01	−0.09	0.08
Needing reassurance, support, or advice	**0.59**	0.22	−0.21	0.08	0.10	−0.15
Feeling different from the others in a group	**0.57**	−0.02	0.10	−0.08	0.08	0.02
Feeling excluded or left out by a group	**0.54**	−0.01	0.10	−0.20	−0.03	0.07
Feeling envious of someone's fortune	**0.54**	−0.20	0.15	0.11	0.07	−0.05
Being alone or isolated for a long time	**0.52**	0.04	0.06	−0.22	−0.04	0.21
Feeling in danger or afraid of something	**0.52**	0.11	0.21	0.04	−0.04	−0.15
Feeling despised or offended by someone	**0.47**	0.15	0.18	−0.08	0.04	−0.10
Surrendering, giving up to someone	**0.34**	−0.01	0.26	0.04	−0.07	−0.03
Feeling guilty toward someone	**0.32**	0.14	0.25	0.02	−0.05	0.02
Factor 2: *Prosociality*						
Giving help, protection, or comfort to someone	−0.03	**0.81**	0.03	−0.10	−0.08	0.03
Taking care of someone	−0.11	**0.76**	0.11	−0.08	0.00	−0.05
Being attuned to someone's needs	0.05	**0.70**	−0.06	0.02	0.02	−0.10
Feeling worried for someone	0.11	**0.69**	−0.08	−0.09	0.02	−0.01
Reassuring or supporting someone	−0.03	**0.63**	−0.12	−0.06	0.12	0.01
Doing altruistic deeds	−0.09	**0.60**	0.08	0.06	−0.07	−0.05
Encouraging someone to make it on his or her own	−0.11	**0.58**	0.04	−0.01	0.07	−0.07
Feeling sympathy for someone's suffering	0.18	**0.54**	−0.05	−0.07	−0.16	0.07
Being willing to do anything for someone's sake	−0.03	**0.53**	0.05	−0.02	−0.11	0.13
Being open and sincere with someone	−0.02	**0.51**	−0.05	0.13	0.00	0.01
Being altruistic toward someone	0.08	**0.46**	0.08	0.10	−0.22	0.08
Feeling compassion for someone	0.11	**0.46**	0.08	−0.11	0.02	0.05
Feeling mutually committed by an agreement	−0.04	**0.46**	0.06	0.08	0.03	0.03
Feeling safe, protected, or comforted by someone	−0.05	**0.41**	−0.02	0.10	0.10	−0.06
Jointly exploring something (e.g., a topic) with someone	0.02	**0.33**	−0.07	0.18	0.23	−0.02
Behaving fairly with someone	0.03	**0.32**	−0.09	0.06	0.02	0.29
Jointly engaging with someone to reach a goal	−0.03	**0.32**	−0.07	0.24	0.13	−0.07
Being interested in someone's ideas and opinions	0.10	**0.30**	−0.13	0.22	0.07	0.10
Factor 3: *Agonism*						
Prevailing, gaining the upper hand on someone	−0.08	0.01	**0.69**	0.01	0.08	0.04
Challenging someone	−0.02	0.12	**0.64**	−0.01	0.05	0.04
Humiliating or mocking someone	0.13	−0.17	**0.63**	0.10	−0.01	−0.03
Using cunning to your own advantage	−0.02	−0.04	**0.63**	0.01	0.09	0.10
Threatening or attempting to intimidate someone	−0.01	0.00	**0.62**	−0.07	−0.04	−0.07
Feeling victorious and superior	−0.13	−0.03	**0.62**	0.09	0.14	0.01
Despising or offending someone	0.18	−0.16	**0.61**	0.10	0.01	0.01
Giving orders, commanding	0.01	−0.03	**0.58**	0.04	0.11	0.06
Opposing or rebelling against someone	0.07	0.24	**0.54**	−0.05	−0.04	0.06
Disobeying someone or defying the will of someone	0.25	0.13	**0.35**	−0.10	−0.01	0.05
Criticizing or judging someone	0.26	−0.05	**0.33**	0.24	0.15	−0.08
Rejecting someone who is flirting with you	0.28	−0.02	**0.31**	0.11	−0.14	0.04
Arguing, getting into a conflict with someone	0.29	0.20	**0.31**	−0.02	0.01	−0.15
Factor 4: *Belongingness*						
Being committed to your group	−0.01	0.04	0.12	**0.82**	−0.15	0.01
Taking part in group activities	0.01	−0.01	0.00	**0.75**	0.04	−0.17
Staying together in a group	−0.01	−0.05	−0.06	**0.75**	0.02	−0.08
Feeling that you belong to a group	−0.13	−0.05	0.09	**0.74**	−0.02	0.04
Being proud of your group	−0.09	0.01	0.06	**0.70**	0.01	−0.04
Identifying yourself with the characteristics of a group	−0.05	−0.03	0.11	**0.66**	−0.09	0.09
Strengthening your bond with your group	0.02	0.16	0.09	**0.54**	−0.16	0.09
Being loyal to your group	0.00	0.17	−0.08	**0.38**	−0.03	0.21
Sharing common goals and intentions with someone	−0.03	0.29	−0.04	**0.35**	0.11	−0.01
Agreeing with someone	0.14	0.07	−0.21	**0.32**	0.01	0.28
Having an equitable exchange with someone	0.07	0.21	0.03	**0.32**	0.04	0.03
Openly sharing your ideas and opinions with someone	0.07	0.22	−0.12	**0.32**	0.11	0.10
Factor 5: *Sexuality*						
Feeling sexually aroused	0.10	−0.07	0.06	−0.10	**0.83**	0.12
Feeling sexually attracted to someone	0.05	−0.07	0.03	0.02	**0.77**	0.05
Experiencing sexual pleasure	−0.05	0.06	0.10	−0.09	**0.75**	−0.06
Engaging in sexual acts (of any kind)	−0.07	0.12	0.05	−0.07	**0.65**	−0.11
Having a sensual, sexy, or seductive attitude	−0.13	0.10	0.21	−0.02	**0.56**	−0.09
Finding someone attractive and sensual	0.09	−0.14	0.00	0.07	**0.56**	0.18

(*continued on next page*)

Table 1 (*continued*)

Factors and items[a]	λ					
Factor 6: *Playfulness*						
Grasping the funny and ironic side of things	−0.09	−0.06	0.02	−0.08	0.00	**0.86**
Being able to laugh at yourself	−0.02	0.06	0.02	−0.05	−0.10	**0.66**
Facing things with humor instead of taking them too seriously	0.02	−0.02	0.09	−0.02	−0.04	**0.64**
Joking or using humor (benevolently)	0.08	0.00	−0.13	0.06	0.19	**0.58**
Being fanciful and imaginative	0.05	0.20	−0.02	−0.01	0.06	**0.41**
Being in a playful and jolly mood	−0.14	0.04	0.09	0.02	0.13	**0.40**
Telling fanciful and funny stories	−0.04	0.11	0.25	0.02	0.02	**0.40**
Playing with someone (any kind of game)	−0.08	0.16	0.05	0.11	0.04	**0.40**
Eigenvalues	***11.94***	***9.43***	***4.96***	***2.96***	***2.50***	***2.12***
Cumulative (%)	***15.92***	***28.50***	***35.12***	***39.06***	***42.39***	***45.22***
Cronbach's alpha	***0.92***	***0.89***	***0.85***	***0.88***	***0.84***	***0.82***

Note.

[a] Items with high factor loadings ($\geq |0.30|$ on one factor and $\leq |0.30|$ on all other factors) are listed. As is standard in factor-analytic studies, a number of items ($n = 17$) did not strongly load onto the factors (according to the study criteria) and hence were not included.

sadness and fear; (2) prosociality would be positively related to a general sense of social acceptance and inclusion and the basic affect of caring; (3) agonism would be positively related to social rejection and exclusion, as well as to the affective state of anger; (4) belongingness would be positively and strongly related to social inclusion; (5) sexuality would be negatively related to problems or difficulties in the sexual sphere and positively related to the tendency to seek, explore, and be curious; and (6) playfulness would be positively related to a general tendency to have fun, experience joy, and be open to new and pleasurable experiences.

3.1. Methods

3.1.1. Participant sampling procedure

The sampling technique for Study 2 was consistent with the procedure used for Study 1. After providing informed consent, participants were asked to complete a wide instrument battery, which took them approximately 25 min. In total, 95% of the questionnaires were returned. The battery included the version of the SMS derived by the EFA in Study 1 (see Appendix B), as well as other well-established, reliable, and valid self-report measures, which assess psychological constructs that are theoretically connected to SMS dimensions (e.g., attachment, submissiveness, belongingness, playfulness; see Section 3.1.3, below). All of the converging scales were chosen to provide evidence of the SMS's construct validity. Moreover, we examined the associations between SMS dimensions and primal affective tendencies related to activity in the brain's emotional systems (Davis et al., 2003; Panksepp, 1998), and the associations between SMS dimensions and submissive behaviors linked to the social dynamics of dominance and subordination (Allan & Gilbert, 1997). In doing so, we aimed at supporting and clarifying the connections between SMS dimensions and evolutionary–ethological constructs.

3.1.2. Participants

The sample consisted of 815 individuals, comprising 475 (58.3%) women and 340 (41.7%) men, with an average age of 24 years ($SD = 3.24$; range = 18–35). The population was predominantly Italian (N = 795; 97.5%) and the general level of education was high, with 38% of participants having at least a university degree and 48% having completed secondary school.

3.1.3. Measures

3.1.3.1. Social Mentalities Scale. The final version of the SMS was comprised of the 75 items selected in Study 1, using the EFA. As depicted in Table 1, these items showed greater factor saturation (with high factor loadings $\geq |0.30|$ on one factor and $\leq |0.30|$ on all other factors).

3.1.3.2. Adult Attachment Scale, Revised. The Adult Attachment Scale, Revised (AAS-R; Collins, 1996) is a self-report instrument designed to measure attachment style and social perception (as determined by attachment style). The measure assumes that individuals with different working models of attachment may experience interpersonal events in distinct ways, depending on their representations of self, others, and the relationship between self and others. The AAS-R consists of 18 items, with 6 items in each of 3 dimensions: (a) *close*, which evaluates the extent to which an individual is comfortable with closeness and intimacy (e.g., "I find it difficult to trust others completely"); (b) *depend*, which measures the extent to which an individual is comfortable depending on others and believes that individuals can be relied on when needed (e.g., "I am comfortable having others depend on me"); and (c) *anxiety*, which assesses the extent to which a person worries about being rejected and abandoned by others (e.g., "I often worry that my partner does not really love me"). Respondents are asked to rate their general feelings with respect to important close relationships on a 5-point Likert scale, ranging from 1 (*not at all characteristic of me*) to 5 (*very characteristic of me*). In the present study, the AAS-R showed sufficiently good validity and reliability, and its dimensions obtained acceptable levels of internal consistency: $\alpha = 0.69$ for the close subscale, $\alpha = 0.75$ for the depend subscale, and $\alpha = 0.72$ the anxiety subscale.

3.1.3.3. Submissive Behavior Scale. The Submissive Behavior Scale (SBS; Allan & Gilbert, 1997) is a self-report questionnaire that assesses a variety of submissive behaviors that are largely associated with a self-perception of inferior social rank or status (Gilbert, 1993). Notably, this measure considers different forms of submission, such as those related to passive/withdrawn attitudes, low assertiveness, inhibition, and social defense, and it considers these behaviors in the evolutionary context of dominance–subordination relational dynamics. The scale consists of 16 items exemplifying submissive behavior (e.g., "I let others criticize me or put me down without defending myself"; "I continue to apologize for minor mistakes"). Participants responded by giving their estimated frequency of these behaviors during the past 4 weeks on a 4-point Likert scale, ranging from 0 (*never*) to 4 (*always*). In the present study, the SBS index obtained good levels of internal consistency ($\alpha = 0.86$).

3.1.3.4. General Belongingness Scale. The General Belongingness Scale (GBS; Malone, Pillow & Osnan, 2012) evaluates belongingness across various levels of relationship, ranging from intimate friends and family to the social community and a generalized sense of belonging that transcends social relationships. It comprises 12 items which participants rated on a 7-point Likert scale, ranging from 1 (*not at all in agreement*) to 7 (*very much in agreement*). The GBS includes two complementary but opposite subscales: (a) *acceptance/inclusion* (e.g.,

"When I am with others, I feel included"; "I feel accepted by others"), and (b) rejection/exclusion (e.g., "I feel like an outsider"; "I feel isolated from the rest of the world"). In the present study, the internal consistency of these subscales was excellent: α = 0.87 for acceptance/inclusion and α = 0.88 for rejection/exclusion.

3.1.3.5. Arizona Sexual Experiences Scale. The Arizona Sexual Experiences Scale (ASEX; McGahuey et al., 2000) assesses sexual difficulties, intensity of sexual desire and/or arousal, and sexual satisfaction. It consists of 5 items (e.g., "How strong is your sex drive?"; "How easily are you sexually aroused [turned on]?"). Participants estimated their sexuality during the past 4 weeks on a 6-point Likert scale, ranging from 1 (*optimal sexual functioning*) to 6 (*sexual dysfunction*). In the present study, the ASEX index demonstrated excellent internal consistency (α = 0.90).

3.1.3.6. Short Measure of Adult Playfulness. The Short Measure of Adult Playfulness (SMAP; Proyer, 2012) assesses respondents' degree of playfulness, which is understood as their predisposition to use humor and to find enjoyment and entertainment in different situations (Barnett, 2007). It consists of 5 items (e.g., "I frequently do playful things in my daily life"; "Good friends would describe me as a playful person"), which participants rated on a 4-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). In the present study, the SMAP showed good reliability (α = 0.81).

3.1.3.7. Affective Neuroscience Personality Scales—Short Version. The Affective Neuroscience Personality Scales—Short Version (ANPS-S; Pingault, Falissard, Côté, & Berthoz, 2012) assesses six basic affective tendencies that have been identified within neuroscience research: playfulness, seeking, caring, fear, anger, and sadness. The measure consists of 36 items scored on a 4-point Likert scale, ranging from 0 (*strongly disagree*) to 3 (*strongly agree*). The ANPS-S includes the following subscales:

1. *Playfulness*: the tendency to have fun, play games with physical contact, use humor, laugh, and generally be joyful (e.g., "I am a person who is easily amused and laughs a lot");
2. *Seeking*: the tendency to feel curious, explore, solve problems, and engage in pleasurable experiences (e.g., "I look forward to new experiences");
3. *Caring*: the tendency to nurture, demonstrate loving behaviors, and feel empathy and affection for others (e.g., "I often feel a strong need to take care of others");
4. *Anger*: the tendency to feel irritated and frustrated, experience annoyance and aggressiveness, and verbally or physically express rage (e.g., "When I am frustrated, I usually get angry");
5. *Fear*: the tendency to experience states of anxiety, tension, and worry; to struggle with decisions; to not be generally courageous; and to demonstrate fleeing behavior (e.g., "People who know me well would say I am an anxious person");
6. *Sadness*: the tendency to feel lonely; to experience distress; or to suffer loss, separation, abandonment, or the breakdown of significant relationships (e.g., "I often feel sad").

In the present study, the ANPS-S subscales showed acceptable internal consistency (Streiner, 2003): α = 0.67 for seeking, α = 0.76 for fear, α = 73 for caring, α = 0.62 for anger, α = 0.70 for playfulness, and α = 0.73 for sadness.

3.1.4. Statistical analyses

Statistical analyses were performed using LISREL 8.8 (Jöreskog & Sörbom, 2006) and SPSS 22 for Windows (IBM, Armonk, NY). To begin, we ran confirmatory factor analysis (CFA) on the sample data (N = 815) to support the goodness of fit of the SMS factor model (Table 1). We used item parceling—a method that is commonly employed in CFA to reduce the number of observed variables by combining individual indicators. Following the procedure described by several authors (e.g., Hau & Marsh, 2004; Nasser & Takahashi, 2003), we constructed item parcels according to skewness, in order to optimize the normality of parcel scores. For each SMS factor, we calculated the first parcel by computing the mean score of the item with the highest negative skewness and the item with the highest positive skewness. The second parcel was obtained by computing the mean score of the item with the second highest negative skewness and the item with the second highest positive skewness, and so on. Using this procedure, all 75 items of the SMS were reduced to 37 parcels. The use of item parcels—created by pairing the responses of items with opposite skewness (e.g., combining the most negatively skewed item with the most positively skewed item)—is a recommended practice in CFA to avoid problems of non-convergence (Hau & Marsh, 2004; Little, Cunningham, Shahar, & Widaman, 2002; Nasser & Wisenbaker, 2003).

Maximum likelihood estimates were calculated from the covariance matrix, and fit indices were also computed. Multiple cut-off thresholds of several fit indices were considered to verify the appropriateness of the SMS factor model: the root mean square error of approximation (RMSEA) ≤ 0.06, the standardized root mean square residual (SRMR) ≤ 0.08, the comparative fit index (CFI) ~0.95, and the non-normed fit index (NNFI) ≥ 0.95 (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). Finally, to examine the convergent validity of the SMS dimensions, we conducted bivariate correlations between all SMS factors and the other study measures.

3.2. Results

3.2.1. Confirmatory factor analysis and convergent validity

The CFA supported the solidity of the SMS factor structure. All of the fit indices confirmed the good adequacy of the six-factor model, χ^2 (614) = 2563.19, $p \leq .001$, RMSEA = 0.06, SRMR = 0.06, CFI = 0.96, NNFI = 0.96. Furthermore the convergent validity between the SMS and similar variables of psychological functioning was good (Table 2).

Notably, the insecurity factor was positively associated with the sadness, submissive behavior, and rejection/exclusion scales and negatively associated with the depend attachment style. The prosociality factor was positively correlated with the caring scale. The belongingness factor was positively associated with the acceptance/inclusion scale and negatively associated with the opposite rejection/exclusion scale. The agonism factor was positively correlated with the anger scale and negatively correlated with the caring scale. The sexuality factor was negatively associated with the sexual problems and difficulties scale, while the playfulness factor was positively correlated with two distinct scales assessing the same dimension.

4. Discussion

The primary goal of the present research was to explore the factor structure, validity, and reliability of the SMS—a new measure that assesses patterns of cognition, affect, and behavior related to basic interpersonal motivational systems. The EFA and CFA identified six main social mentalities: (a) insecurity, (b) prosociality, (c) agonism, (d) belongingness, (e) sexuality, and (f) playfulness (Table 1).

The fairly good overlap between these six factorial dimensions and the set of seven interpersonal motivational systems described in the AIMIT manual supports the equivalence (in terms of content) between the AIMIT indicators and SMS items, as well as the overall soundness of Liotti's multimotivational model. However, it also provides two main indications of domain-general properties within social mentalities. First, items depicting a mindset characterized by fragility and loneliness/isolation, along with a need for intimacy and protection (thus referring to the attachment system) converged in an insecure social mentality. Insecure social mentality also encompassed items describing

Table 2
Bivariate correlations between the factors of the Social Mentalities Scale and similar dimensions of individual psychological functioning (N = *815*).

Psychological variables	*M* (*SD*)	Factors of SMS					
		Insecurity	Prosociality	Agonism	Belongingness	Sexuality	Playfulness
		2.61 (0.71)	3.61 (0.54)	2.12 (0.62)	3.56 (0.66)	3.34 (0.83)	3.59(0.66)
ANPS-S							
Seeking	2.08 (0.46)	−0.18***	0.31***	−0.13***	0.27***	0.23***	0.33***
Fear	1.05 (0.57)	0.32***	0.06	−0.10**	−0.05	−0.15***	−0.12***
Caring	2.12 (0.52)	−0.15***	0.47***	−0.27***	0.23***	0.05	0.12***
Anger	1.25 (0.49)	0.24***	−0.01	0.23***	−0.04	0.07	−0.02
Playfulness	2.07 (0.46)	−0.23***	0.29***	−0.12***	0.34***	0.23***	0.52***
Sadness	2.25 (0.57)	0.66***	0.05	0.09**	−0.19***	−0.12***	−0.12***
AAS-R							
Close	18.70 (2.70)	−0.24***	0.01	−0.03	0.01	0.12***	0.02
Depend	19.33 (4.67)	−0.47***	0.10**	−0.11***	0.31***	0.19***	0.15***
Anxiety	16.38 (3.40)	0.33***	0.05	0.12***	0.05	0.03	0.06
GBS							
Acceptance/inclusion	5.20 (1.21)	−0.41***	0.32***	−0.05	0.54***	0.15***	0.29***
Rejection/exclusion	2.21 (1.25)	0.56***	−0.20***	0.14***	−0.39***	−0.16***	−0.20***
SBS	2.47 (0.62)	0.49***	−0.03	0.04	−0.14***	−0.11***	−0.08*
ASEX	11.97 (3.24)	0.01	−0.05	−0.17***	−0.06	−0.19***	−0.13***
SMAP	5.22 (1.08)	−0.13***	0.20***	0.01	0.22***	0.21***	0.46***

Note. AAS-R = Adult Attachment Scale, Revised; SBS = Submissive Behavior Scale; GBS = General Belongingness Scale; ASEX = Arizona Sexual Experiences Scale; SMAP = Short Measure of Adult Playfulness; ANPS-S = Affective Neuroscience Personality Scales – Short Version.
* $p \leq .05$.
** $p \leq .01$.
*** $p \leq .001$.

a mindset characterized by self-devaluation, shame, and surrender (thus referring to the original AIMIT submissive subroutine of rank competition). This makes sense from an evolutionary perspective, because all subjective states of distress and vulnerability mobilize the attachment system, but the effectiveness of a care-seeking social mentality depends on the willingness of a "strong and wise" other to provide support; this, in turn, could be mediated by submissive strategies aimed at deactivating a competitive mindset (e.g., Allan & Gilbert, 1997). Therefore, our findings support the possibility of a sophisticated functional interplay between attachment and submission mechanisms (Gilbert & Bailey, 2014), merging in a unique insecure social mentality.

The second and most relevant indication of domain-general properties is that items referring to the original AIMIT peer cooperation system failed to load onto a specific factor. Instead, they contributed to a broader pattern of prosocial mentality, which was mainly centered on caregiving and, to a lesser extent, belongingness. This may be due to the multifaceted nature of Liotti's operational definition of peer cooperation, which seems to include an egalitarian attitude, a commitment toward common goals, a sense of sharing/communality, and a disposition to negotiate fairly. In fact, the peer cooperation items that contributed to prosociality in the current study mainly referred to a committed/engaged and open mindset, while the items that contributed to belongingness mainly referred to a sense of sharing and communality.

The merging of caregiving and peer cooperation into prosocial mentality may also reflect the notorious and long-debated difficulty of drawing a clear functional distinction between altruistic and fairness-based prosociality, in terms of both outcomes and intentions (Brasini et al., 2018; Hein, Morishima, Leiberg, Sul, & Fehr, 2016; Jensen, 2016(Chapais, 2006); West, Griffin, & Gardner, 2007). The present results for the prosocial dimension support the idea that human cooperation emerges from empathic concern and perspective-taking (de Waal, 2008; de Waal, 2012; Hrdy, 2014; Vaish & Tomasello, 2012), combined with well-developed reciprocity (Brosnan & de Waal, 2002; Preston & de Waal, 2002; Preston, 2013) and a sense of fairness (Brosnan & de Waal, 2014; Fehr & Schmidt, 1999). Accordingly, Cortina and Liotti (2014) proposed that the co-evolution of empathy, egalitarian forms of cooperation, and advanced intersubjective skills resulted in "the emergence of language and a symbolic form of evolution based on learning (cultural evolution)" (p. 865). Based on this theoretical premise, once human cooperation is placed at the boundary between hard-wired genetic mechanisms and domain-general adaptations to cultural diversity, it is not surprising that a broader prosocial mentality may subsume the specific operations of a cooperative motivational system. Prosociality, similar to compassion, may rely on the ability to reflect on cooperative functions and principles and apply these to different domains; as Gilbert (2014) suggested: "it breaks the human mind out of being a modularized mind and allows much wider domains for processing – what Mithen (1996) called the evolution of the de-modularized mind" (p. 20).

The second aim of this research was to verify the convergent validity of the SMS in investigating the relationships between social mentalities and various psychological dimensions linked to motivational systems. Overall, the results mainly confirmed our second hypothesis, finding that social mentalities were associated with similar constructs in a conceptually coherent and psychometrically sound way. For example, insecurity, which combined insecure attachment with some aspects of submission, was associated with an anxious attachment style and rejection sensitivity (e.g., Baumeister & Leary, 1995; Bowlby, 1980); belongingness referred to a global sense of acceptance and social inclusion (e.g., Malone et al., 2012); and playfulness was strongly related to individual attitudes of happiness and joy, as well as humor, laughter, and a tendency to seek playful experiences (e.g., Proyer, 2012). Moreover, the correlations between SMS subscales and ANPS-S dimensions provide support for the link between human emotional and motivational systems. For example, a significant relationship was found between insecurity and the emotional system of sadness, as well as between prosociality and caring, and agonism and anger (e.g., Fassone et al., 2012). However, the ANPS anger system was equally associated with the social mentality of insecurity, insofar as this system can be triggered by a "fight or flight" survival response (Montag & Davis, 2018).

Another unexpected result was the lack of a significant association between close attachment and both prosociality and belongingness,

despite a connection being found between these social mentalities and the dependent attachment style. This finding seems to suggest that, to a certain extent, attitudes and behaviors referring to prosociality and belongingness can be linked to an individual disposition to ask for help and support, when needed (cfr., Baumeister & Leary, 1995; Mikulincer & Shaver, 2015).

The current research presents some limitations. First, the data may have been biased by a social desirability effect, which frequently characterizes empirical research using self-report measures. Second, the sampling method may have reduced the generalizability of the results. Third, the samples were limited to individuals aged 18–35 years. As the display of social mentalities might be influenced by age, future studies should verify the psychometric properties of the SMS in samples of older participants. Finally, participants were almost exclusively Italian. Given that the social mentalities reported in the present investigation may reflect some specificities of culture, further cross-cultural research (enabling direct comparisons) is required. In particular, future studies should seek to provide additional evidence on the structure, validity, and reliability of the SMS, in order to promote cultural adaptations of this measure (see Appendix A and B).

5. Conclusions

The present investigation demonstrated that the SMS could be a valid and reliable instrument for assessing the social mentalities that inform human interactions. The SMS is a user-friendly and easy-to-complete measure that could be applied in a wide range of clinical and research contexts. It could be helpful in improving our understanding of the ways in which social mentalities affect the quality of interpersonal relationships in several social contexts, and the extent to which distinct social mentalities may be linked to certain psychopathological conditions (e.g., Allan & Gilbert, 1997; Cortina & Liotti, 2010; Gilbert, 2005; Ivaldi, 2017). Moreover, the measure could be used in various clinical settings to study the associations between social mentalities and dimensions of the therapeutic relationship, especially patients' relational patterns toward clinicians, and to investigate intersubjective interactions between the patient and therapist during the psychotherapy process (Tanzilli, Colli, Gualco, & Lingiardi, 2018).

CRediT authorship contribution statement

Brasini Maurizio:Conceptualization, Writing - original draft.**Tanzilli Annalisa**:Formal analysis, Methodology, Writing - original draft.**Pistella Jessica**:Data curation, Formal analysis, Methodology.**Gentile Daniela**:Data curation, Writing - original draft.**Di Marco Ivan**:Writing - original draft.**Mancini Francesco**:Supervision.**Lingiardi Vittorio**:Supervision, Writing - original draft.**Baiocco Roberto**:Conceptualization, Methodology, Supervision, Writing - original draft.

Declaration of competing interest

None.

Appendix A. Social Mentalities Scales (SMS) English version (Brasini et al., 2020)

Below you will find a list of short sentences describing some ways of feeling or behaving in relationships with others.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very often

Please indicate how often each of the things listed in the last 4 weeks happened to you by ticking the corresponding box.

1.	Arguing, getting into a conflict with someone	1	2	3	4	5
2.	Staying together in a group	1	2	3	4	5
3.	Using cunning to your own advantage	1	2	3	4	5
4.	Being able to laugh at yourself	1	2	3	4	5
5.	Feeling sexually attracted to someone	1	2	3	4	5
6.	Feeling in danger or afraid of something	1	2	3	4	5
7.	Behaving fairly with someone	1	2	3	4	5
8.	Being proud of your group	1	2	3	4	5
9.	Joking or using humor (benevolently)	1	2	3	4	5
10.	Being alone or isolated for a long time	1	2	3	4	5
11.	Feeling ignored or neglected by someone	1	2	3	4	5
12.	Being fanciful and imaginative	1	2	3	4	5
13.	Feeling insecure, fragile, or vulnerable	1	2	3	4	5
14.	Finding someone attractive and sensual	1	2	3	4	5
15.	Feeling worried for someone	1	2	3	4	5
16.	Being willing to do anything for someone's sake	1	2	3	4	5
17.	Rejecting someone who is flirting with you	1	2	3	4	5
18.	Agreeing with someone	1	2	3	4	5
19.	Being in a playful and jolly mood	1	2	3	4	5
20.	Humiliating or mocking someone	1	2	3	4	5
21.	Taking part in group activities	1	2	3	4	5
22.	Challenging someone	1	2	3	4	5
23.	Trying to hide your discomfort	1	2	3	4	5
24.	Despising or offending someone	1	2	3	4	5
25.	Feeling ashamed	1	2	3	4	5
26.	Feeling excluded or left out by a group	1	2	3	4	5
27.	Suffering (either physically or emotionally)	1	2	3	4	5
28.	Feeling lonely or abandoned	1	2	3	4	5
29.	Encouraging someone to make it on his/her own	1	2	3	4	5

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very often

Please indicate how often each of the things listed in the last 4 weeks happened to you by ticking the corresponding box.

30.	Feeling defeated or like a loser	1	2	3	4	5
31.	Sharing common goals and intentions with someone	1	2	3	4	5
32.	Criticizing or judging someone	1	2	3	4	5
33.	Feeling envious of someone's fortune	1	2	3	4	5
34.	Surrendering, giving up to someone	1	2	3	4	5
35.	Being attuned to someone's needs	1	2	3	4	5
36.	Opposing or rebelling against someone	1	2	3	4	5
37.	Feeling victorious and superior	1	2	3	4	5
38.	Jointly engaging with someone to reach a goal	1	2	3	4	5
39.	Feeling mutually committed by an agreement	1	2	3	4	5
40.	Telling fanciful and funny stories	1	2	3	4	5
41.	Feeling that you belong to a group	1	2	3	4	5
42.	Playing with someone (any kind of game)	1	2	3	4	5
43.	Feeling inferior or of little value	1	2	3	4	5
44.	Needing reassurance, support, or advice	1	2	3	4	5
45.	Being committed to your group	1	2	3	4	5
46.	Feeling compassion toward someone	1	2	3	4	5
47.	Having an equitable exchange with someone	1	2	3	4	5
48.	Engaging in sexual acts (of any kind)	1	2	3	4	5
49.	Identifying yourself with the characteristics of a group	1	2	3	4	5
50.	Giving help, protection, or comfort to someone	1	2	3	4	5
51.	Taking care of someone	1	2	3	4	5
52.	Reassuring or supporting someone	1	2	3	4	5
53.	Disobeying someone or defying the will of someone	1	2	3	4	5
54.	Feeling despised or offended by someone	1	2	3	4	5
55.	Grasping the funny and ironic side of things	1	2	3	4	5
56.	Facing things with humor instead of taking them too seriously	1	2	3	4	5
57.	Experiencing sexual pleasure	1	2	3	4	5
58.	Feeling different from the others in a group	1	2	3	4	5
59.	Feeling guilty for someone	1	2	3	4	5
60.	Being self-critical	1	2	3	4	5
61.	Doing altruistic deeds	1	2	3	4	5

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very often

Please indicate how often each of the things listed in the last 4 weeks happened to you by ticking the corresponding box.

62.	Openly sharing your ideas and opinions with someone	1	2	3	4	5
63.	Being loyal to your group	1	2	3	4	5
64.	Having a sensual, sexy, or seductive attitude	1	2	3	4	5
65.	Feeling sexually aroused	1	2	3	4	5
66.	Being open and sincere with someone	1	2	3	4	5
67.	Being interested in someone's ideas and opinions	1	2	3	4	5
68.	Prevailing, gaining the upper hand on someone	1	2	3	4	5
69.	Strengthening your bond with your group	1	2	3	4	5
70.	Being altruistic toward someone	1	2	3	4	5
71.	Feeling simpathy for someone's suffering	1	2	3	4	5
72.	Feeling safe, protected, or comforted by someone	1	2	3	4	5
73.	Jointly exploring something (e.g. a topic) with someone	1	2	3	4	5
74.	Giving orders, commanding	1	2	3	4	5
75.	Threatening or attempting to intimidate someone	1	2	3	4	5

Appendix B. Social Mentalities Scales (SMS) Italian version (Brasini et al., 2020)

Qui di seguito troverà una lista di brevi frasi che descrivono alcuni modi di sentirsi o di comportarsi nei rapporti con gli altri.

1	2	3	4	5
Mai	Raramente	Qualche volta	Spesso	Molto spesso

Per favore, indichi con che frequenza le è capitata ciascuna delle cose elencate nelle ultime 4 settimane, barrando la casella corrispondente.

1.	Litigare, essere in conflitto con qualcuno	1	2	3	4	5

2.	Stare in un gruppo	1	2	3	4	5
3.	Usare l'astuzia e l'inganno a proprio vantaggio	1	2	3	4	5
4.	Saper ridere di sé	1	2	3	4	5
5.	Sentirsi sessualmente attratto da qualcuno	1	2	3	4	5
6.	Avere paura, sentirsi in pericolo	1	2	3	4	5
7.	Comportarsi in modo equo con qualcuno	1	2	3	4	5
8.	Essere fiero del proprio gruppo	1	2	3	4	5
9.	Scherzare o usare l'umorismo (benevolmente)	1	2	3	4	5
10.	Stare a lungo da solo, isolarsi	1	2	3	4	5
11.	Sentirsi ignorato o trascurato da qualcuno	1	2	3	4	5
12.	Usare la fantasia e l'immaginazione	1	2	3	4	5
13.	Sentirsi bisognoso, fragile o insicuro	1	2	3	4	5
14.	Trovare qualcuno attraente e sensuale	1	2	3	4	5
15.	Preoccuparsi per qualcuno	1	2	3	4	5
16.	Essere pronto a tutto per il bene di qualcuno	1	2	3	4	5
17.	Respingere un corteggiatore	1	2	3	4	5
18.	Essere d'accordo con qualcuno	1	2	3	4	5
19.	Avere un umore “giocherellone”	1	2	3	4	5
20.	Umiliare o deridere qualcuno	1	2	3	4	5
21.	Svolgere attività in gruppo	1	2	3	4	5
22.	Sfidare qualcuno	1	2	3	4	5
23.	Cercare di nascondere il proprio disagio	1	2	3	4	5
24.	Disprezzare o offendere qualcuno	1	2	3	4	5
25.	Provare vergogna	1	2	3	4	5
26.	Sentirsi eslcuso da un gruppo	1	2	3	4	5
27.	Soffrire (fisicamente o emotivamente)	1	2	3	4	5
28.	Sentirsi solo o abbandonato	1	2	3	4	5
29.	Incoraggiare qualcuno a farcela da solo	1	2	3	4	5

1	2	3	4	5
Mai	Raramente	Qualche volta	Spesso	Molto spesso

Per favore, indichi con che frequenza le è capitata ciascuna delle cose elencate nelle ultime 4 settimane, barrando la casella corrispondente.

30.	Sentirsi sconfitto o perdente	1	2	3	4	5
31.	Avere obiettivi e intenzioni comuni con qualcuno	1	2	3	4	5
32.	Criticare o giudicare qualcuno	1	2	3	4	5
33.	Provare invidia per qualcuno	1	2	3	4	5
34.	Cedere, sottostare a qualcuno	1	2	3	4	5
35.	Sintonizzarsi sui bisogni di qualcuno	1	2	3	4	5
36.	Ribellarsi, opporsi a qualcuno	1	2	3	4	5
37.	Sentirsi superiore e vincente	1	2	3	4	5
38.	Impegnarsi per raggiungere un obiettivo con qualcuno	1	2	3	4	5
39.	Impegnarsi per il rispetto reciproco di patti e accordi	1	2	3	4	5
40.	Raccontare storie divertenti e fantasiose	1	2	3	4	5
41.	Sentire di appartenere ad un gruppo	1	2	3	4	5
42.	Giocare insieme a qualcuno (qualsiasi tipo di gioco)	1	2	3	4	5
43.	Sentirsi inferiore o di scarso valore	1	2	3	4	5
44.	Necessitare di rassicurazione, sostegno o consiglio	1	2	3	4	5
45.	Dedicarsi al proprio gruppo	1	2	3	4	5
46.	Provare compassione per qualcuno	1	2	3	4	5
47.	Avere uno scambio alla pari con qualcuno	1	2	3	4	5
48.	Compiere atti sessuali (di qualsiasi tipo)	1	2	3	4	5
49.	Riconoscersi nelle caratteristiche di un gruppo	1	2	3	4	5
50.	Dare aiuto, protezione o conforto a qualcuno	1	2	3	4	5
51.	Prendersi cura di qualcuno	1	2	3	4	5
52.	Rassicurare o sostenere qualcuno	1	2	3	4	5
53.	Sottrarsi al volere altrui	1	2	3	4	5
54.	Sentirsi disprezzato o offeso da qualcuno	1	2	3	4	5
55.	Cogliere il lato comico e ironico delle cose	1	2	3	4	5
56.	Sdrammatizzare, non prendere troppo sul serio le cose	1	2	3	4	5
57.	Provare piacere sessuale	1	2	3	4	5
58.	Sentirsi diverso dagli altri in un gruppo	1	2	3	4	5
59.	Sentirsi in colpa nei confronti di qualcuno	1	2	3	4	5
60.	Giudicarsi negativamente, criticarsi	1	2	3	4	5
61.	Compiere azioni altruistiche	1	2	3	4	5

1	2	3	4	5
Mai	Raramente	Qualche volta	Spesso	Molto spesso

Per favore, indichi con che frequenza le è capitata ciascuna delle cose elencate nelle ultime 4 settimane, barrando la casella corrispondente.

62.	Condividere i propri interessi e opinioni con qualcuno	1	2	3	4	5
63.	Essere leale verso il proprio gruppo	1	2	3	4	5

64.	Avere un atteggiamento sensuale o sexy	1	2	3	4	5
65.	Sentirsi sessualmente eccitato	1	2	3	4	5
66.	Aprirsi, essere sinceri con qualcuno	1	2	3	4	5
67.	Interessarsi alle idee e opinioni di qualcuno	1	2	3	4	5
68.	Imporsi, prevalere su qualcuno	1	2	3	4	5
69.	Impegnarsi per rinforzare il legame con un gruppo	1	2	3	4	5
70.	Anteporre il bene altrui al proprio	1	2	3	4	5
71.	Provare empatia per la sofferenza di qualcuno	1	2	3	4	5
72.	Sentirsi confortato, aiutato o protetto da qualcuno	1	2	3	4	5
73.	Esplorare qualcosa (es. un argomento) con qualcuno	1	2	3	4	5
74.	Dare ordini a qualcuno, comandare	1	2	3	4	5
75.	Minacciare o tentare di intimorire qualcuno	1	2	3	4	5

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