

Psychometric Properties of Mind-reading Belief Scale on an Italian Sample and Correlation with the Self-Construal

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Theory of Mind (ToM) is the lifespan developing ability to attribute mental states. This ability enables the individual to predict and interpret one's own and others' behavior. In this respect, *beliefs* about one's own capacity to attribute mental states represent a fundamental component of this construct. The present study aims to compare the unidimensional structure of the Mind-reading Belief Scale, evaluating beliefs about personal ToM skills, with an alternative two-factor model, which could better explain the latent structure of the scale outlining the relational nature of the construct through the articulation self-other. Moreover, the relations with self-construal, as a pivotal element for subjective differentiation, were also investigated. Our data support the two-factor model as a better structuring of the pool of original items. Finally, the correlations found with self-construal scales indicate that self-construal is involved in defining beliefs about one's own meta-representational skills.

Key words: Theory of Mind, self-report, self-construal, mind-reading, self-awareness

Theory of Mind and Beliefs about Mind-Reading Skills

Theory of Mind (ToM) is the ability to predict and anticipate others' behavior through attribution of mental states (Premack & Woodruff, 1978; Wimmer & Perner, 1983), and is one of the fundamental psychological constructs when studying social cognition. ToM enables individuals to get into a relationship and takes advantage of attributing beliefs to others

(Proust, 2007). Such attributions, also called mind-reading, are made by building metarepresentations of what is attributed in terms of thoughts and beliefs, thus, guiding behavior. The psychological development that generates ToM abilities is a lifelong process (see Hughes & Leekam, 2004). In the early Eighties, when ToM research began, the focus was on the early development of ToM during childhood (Charman, Baron-Cohen, Swettenham, Baird, Cox, & Drew, 2000), and on the identification of its developmental steps (Wimmer & Perner, 1985; Astington & Jenkins, 1995). On one hand, increasing evidence has shown that ToM is closely intertwined with other psychological components, such as language, emotions, etc. (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991; Dunn, 1995; Davis & Pratt, 1995; Kinderman, Dunbar & Bentall, 1998;

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Hughes & Cutting, 1999; Astington & Jenkins, 1999; Carlson & Moses, 2001; Kühnen & Oyserman, 2002; Birch & Bloom, 2003, 2004; Apperly, 2012). In this respect, although controversially, gender differences have emerged in ToM abilities suggesting that women, as compared to men, show a greater ToM competence, particularly in relation to the affective dimension of social cognition, such as emotion recognition, social sensitivity, empathy, and emotional intelligence (McClure, 2000; Baron-Cohen, O'Riordan, Stone, Jones, & Plaisted, 1999; Baron-Cohen & Wheelwright, 2004; Brackett & Salovey, 2006; see also, Adenzato et al., 2017). Additionally, it has also been shown that ToM evolution affects all the different epochs of life (Kuhn, 2000; Valle, Massaro, Castelli, & Marchetti, 2015; Cabinio et al., 2015). In this way, the original concept of ToM has been re-defined as a multifaceted and life-span evolving psychological construct.

ToM is a constantly online system that, in order to ensure a good level of social adaptation (Moore & Frye, 1991), returns feedbacks to the individual about the quality of his/her metarepresentations deriving from socio-relational experiences. This dynamic seems to have at least two implications. The first concerns an ever increasing awareness of one's own ToM abilities (Nicholas & Stich, 2003). In this respect, several studies have suggested that the ability to use specific psychological skills is variable depending on the level of the individual's awareness of such abilities (Wicklund & Duval, 1971). Similarly, ToM may be also connected to metacognitive knowledge about such awareness. The second implication concerns the need to distinguish between self and others. In fact, it is commonly agreed that reasoning about ToM acquires meaning in the intersubjective and dialogic perspective (Zlatev, Racine, Sinha, & Itkonen, 2008). This means that, within a relationship, it is not sufficient to attribute mental contents to others, but also to consider the

other's attribution of our mental contents. In the following paragraphs, these implications will be discussed and shaped into research questions.

Theory of Mind and Self-Construal

In order to be successful during social interactions, it is necessary to be able to distinguish the Self from the Other. Such a well-known dualism has been widely investigated (see Steinbeis, 2016). Evidence from research in developmental psychology suggests that the creation of the concept of Self and the concept of Other proceeds in parallel. This process begins from infancy when these two concepts start to share their most intrinsic nature, and namely that there cannot be self-identification without the recognition of the other, and vice-versa (Neisser, 1991; Aron, Aron, Tudor, & Nelson, 1991; Rochat & Hespos, 1997; Woodward, Sommerville, & Guajardo, 2001). In early childhood, the representation of the Self is partly overlapped with the representation of the Other (Trevvarthen, 1979, 1993; Aitken & Trevvarthen, 1997). The process of separation and distinction between self-representation and the representation of the other is evident in the child when the child begins to speak in the first-person. This process involves the recruitment from memory of previously learned self-schemas allowing addressing the specific on-going events.

The organization of these self-schemas strongly depends on how the concept of self develops. It has been theorized that self-construal can develop independently of others or interdependently with others (Singelis, 1994; Gore & Cross, 2014). For example, researchers (e.g., Gardner, Gabriel, & Lee, 1999) have suggested that individuals, who are considered as part of a cultural frame, can focus on themselves generating an individualistic Self; on the other hand, if individuals consider themselves as members of a group, they undergo the construc-

tion of a collectivist Self (Triandis, 1988). Self-construal can be then defined as independent, i.e., separated from others' perspective (e.g., culture-related perspective), or interdependent, i.e., shaped in strong connection with others (e.g., group-related perspective; Markus & Kitayama, 1991). Additionally, in order to include the relational meaning of social cognition into the dynamics that contribute to shaping a self-profile, another theoretical concept has been introduced, and namely the relational-interdependent self-construal (Cross, Bacon, & Morris, 2000; Cross, Morris, & Gore, 2002; Cross, Gore, & Morris, 2003). This concept has been developed owing to the impact of the interdependent self-construal on relationships. Interdependency implies a high sharing with others in building one's own self-profile and such a tendency influences the relationships themselves.

In this light, it could be plausible to suggest that self-construal, and namely the way our Self is built, operates implicitly, and that it is ultimately associated with self-awareness about our ToM skills in terms of mind-reading abilities. In other words, the way we regard our mind-reading skills also involves our self-construal. In this respect, it is already known that self-construal is associated with explicit cognitive processes (among which perspective taking; Aron et al., 1991; Gardner et al., 1999; Gore & Cross, 2011; Mandel, 2003), as well as with implicit mechanisms that, within social cognition, do not always operate in a goal-directed fashion or imply awareness. In this light, by operating implicitly, self-construal will be incorporated in a subjective perspective, and, in turn, will be more or less reflected in one's inclination to attribute different mental contents to others.

Mind-Reading Belief Scale

While research on ToM has grown exponentially, little attention has been paid to self-aware-

ness about one's own ToM or, in other words, about beliefs regarding one's personal competences of mind-reading. As far as we know, the most substantial work in this respect is Realo et al.'s (2003) research, in which the authors explored the characteristics of the individuals' awareness about their mind-reading abilities. To this purpose, they proposed a Mind-reading Belief Scale (MBS – Realo et al., 2003), to highlight beliefs about one's mind-reading skills.

In particular, Realo and colleagues built a self-report scale based on a wide pool of items (63 items) drawn from the proposal by Davis and Kraus (1997) of four thematic groups of mind-reading abilities. These groups are related to the ability to read others' (I) personality traits, (II) mental states, (III) role or status, in order to predict other's (IV) future behavior. Realo and colleagues initially conducted a principal component analysis, which showed a three-factor structure. These factors were not strictly orthogonal; most of the variance was explained by the first factor and the other 2 factors randomly captured the essence of Davis and Kraus's proposal, thus making it difficult to interpret the three-factor structure in light of the above-mentioned thematic groups. For these reasons, the authors decided to opt for a unidimensional model and to proceed selecting the items of the scale according to several inclusion criteria: the items should have had a high factor loading on the first factor; the scale should have included both direct and reversed items; the items should have covered all four thematic groups. The final version of MBS enlisted 8 items evaluable by means of a 5-point Likert scale. The principal component analysis carried out on the selected items confirmed the presence of only one general factor. The Cronbach's alpha reliability of those 8 items was appropriate, suggesting that the selected items represented the total item-pool well. In light of these results, Realo and colleagues claimed that beliefs about mind-reading ability revolve

around a single and general theme: the more people believe to be good at judging the other's nature, the more they believe to be capable of inferring thoughts, emotions and behavioral intentions. This was in contrast with Davis and Kraus, who concluded that the presence of a generalized mind-reading accuracy is rather weak.

The main purpose of Realo and colleagues was to create a brief and user-friendly scale targeted to adults and, for this reason, they preferred keeping MBS as simple as possible. However, considering that ToM cannot be regarded as a unidimensional psychological construct, but rather multifaceted and context-related, it would be appropriate to hypothesize a more complex organization also for beliefs about one's own ToM ability, able to capture – at least – the distinction between Self and Other that characterizes relationships. Accordingly, we suggest that the latent structure underlying this scale should be more articulated than that described in the unidimensional latent model, even if at the expense of its shortness. This would entail the construction of a two-factor model latent structure able to grasp the dualism between Self and Other underpinning beliefs about ToM skills described above. More specifically, the basic idea with respect to our model structuring is that a model that accounts for the Self-Other dualism would be better at outlining the implicit mechanisms involved in the individuals' responses to the MBS items.

Aims

The first aim of this study was to investigate the psychometric properties of MBS in an Italian sample. Just like ToM and its use, which is variable on the basis of the context, beliefs about one's own mind-reading abilities may also follow the same course in terms of variability. For this reason, it was relevant to assess the psychometric properties of the MBS on a different

population investigating potential discrepancies associated with the appropriateness of the model (Lillard, 1998; Kobayashi, Glover, & Temple 2007). As a matter of fact, this is the first study that investigates the MBS latent structure, validity and reliability in an Italian sample. Other studies in literature have used the MBS; however, as far as we know, none have investigated its psychometric properties (Gavita, 2005; Ames & Kammrath, 2004).

Following the theoretical background above described, we further compared the MBS single-factor model, as suggested in Realo et al., with a two-factor model. The two-factor model should, in fact, take into account the dualism self/others explained above, which can be evinced from the way in which the original eight MBS items have been written (namely four items written in the first-person and four items written in an impersonal form). Accordingly, we grouped the eight items into two clusters, emphasizing the different meanings that mental concepts acquire according to the used pronoun (Gallagher, 2000). To this purpose, we clustered together the items specifically referring to beliefs about one's own mind-reading abilities (the four items written in the first person) and those referring to a general self-awareness about mind-reading abilities (the four items written in an impersonal form). The use of the first-person pronoun is unequivocally self-referential. This principle is usually called "immunity principle" to mean "immunity to error through misidentification relative to the first-person pronoun" (Shoemaker, 1968, p. 559, 1984). On the other hand, items written in an impersonal form could lead individuals to not specifically reason about themselves. Additionally, considering that evidence about ToM has sometimes highlighted gender discrepancies as introduced above (e.g., Adenzato et al., 2017), it is relevant to assess whether measurement of beliefs about one's mind-reading competences is similar between women and men.

After assessing the MBS's psychometric properties, the second aim of this study was to investigate the relationships between the MBS' structure and Self-Construal. The idea is that self-evaluation of mind-reading abilities can decline according to a relational perspective that implies Self and Others. In this respect, the link between the different types of self-construal (i.e., independent, interdependent, and relational) and MBS is worthy of attention in order to account for the complexity that characterizes the self-evaluation process about beliefs of one's own mind-reading abilities.

Methods

Participants and Procedure

Flyers were distributed within Catholic University of the Sacred Heart, Milan, with the invitation to participate in the research. Additionally, people outside the university have been invited through knowledge networks. People interested in participating in the study were requested to send an email and were contacted by phone for a brief interview. Those who reported no psychiatric or neurological impairment and declared no use of drugs or psychotropic drugs were scheduled to come to the University Psychology Department lab to complete the scales. No other exclusion criteria were applied. All participants gave written consent to participate in the study.

Sample 1. The first sample was composed of 256 Italian participants ($F = 50.4\%$; $M = 49.6\%$), aged between 17-60 years (mean age = 26.41; $SD = 6.58$). The participants were requested to fill out the Mind-reading Belief Scale (MBS), which required about 10 minutes for completion (welcoming participant, giving instructions, and filling out the scale).

Sample 2. The second sample was composed of 102 Italian participants ($F = 80.4\%$; $M = 19.6\%$; mean age = 31.21; $SD = 9.14$). Besides

filling out the MBS, participants in this group were also presented with two self-construal scales described below. The completion of all scales required about 20 minutes using a paper-pencil mode (welcoming participant, give instructions, fill the scales).

Scales

Mind-reading Belief Scale (MBS; Realo et al.) is a self-report scale, composed of 8 items exploring individuals' opinions related to their personal mentalization abilities, e.g., "Usually, I know beforehand what my conversation partner is going to say". All items were translated into Italian including the back translation procedure. Participants were required to rate the statements using a 5-point Likert Scale from 0 ("strongly disagree") to 4 ("strongly agree").

The Independence and Interdependence Self construal Scale (ISC; Gudykunst et al., 1996) is a 29 items self-report scale that evaluates the independence (ISC_Id) and interdependence (ISC_It) of the self-construal (15 items for ISC_Id and 14 items for ISC_It); e.g., "If there is a conflict between my values and the values of groups of which I am a member, I follow my values" (ISC_Id) and "I respect the majority's wishes in groups of which I am a member" (ISC_It). Participants were required to express their degree of agreement using a 7-point Likert Scale from 1 ("strongly disagree") to 7 ("strongly agree"). A Confirmatory Factor Analysis was conducted on our sample in order to verify the structure of the scale. Three items that presented non-significant factor loading were deleted. The final version of the scale was composed of 26 items (14 items for ISC_Id and 12 items for ISC_It). Reliability was good: ISC_Id $\omega = 0.837$; ISC_It $\omega = 0.861$.

The Relational-Interdependent Self-Construal Scale (RISC; Cross et al., 2000) is a self-report scale that measures how much people define their own Self in relational-oriented terms.

RISC is composed of 11 items, e.g., “*My close relationships are an important reflection of who I am*”, ratable using a 7-point Likert Scale ranging from 1 (“*strongly disagree*”) to 7 (“*strongly agree*”). A Confirmatory Factor Analysis was then conducted on our sample subjects in order to assess the unidimensional structure of the scale. Five items presented a non-significant factor loading and were deleted. The final version of the scale was composed of 6 items. Reliability was only acceptable: RISC $\omega = 0.665$.

Results

Psychometrics Properties of MBS

The first aim of this study was to evaluate the MBS structure proposed by Realo and colleagues (2003). A Confirmatory Factorial Analysis (CFA) assessing a one-latent-factor structure was tested using Mplus (Muthén & Muthén, 1998-2011), and χ^2 ; the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) were used to evaluate the fit of the model. The χ^2 should be non-significant in order to consider the CFA model as fitting the observed data; however, since it is largely affected by sample size (Hu & Bentler, 1995), we examined other fit indices (Hu & Bentler, 1998): 1) CFI, an incremental fit index sensitive to complex model misspecification, was examined considering that the cut off can be set according to two criteria. Models with acceptable fit present a RMSEA < .08 and CFI > .90 (Bentler, 1990), whereas models with optimum fit present a RMSEA < .05 and CFI > .95

(Hu & Bentler). The one-factor structure of the MBS showed a poor fit (Table 1).

With the aim to compare the single-factor model above with a two-factor model that takes into account the dualism self/others, we hypothesized a possible reorganization of the items considering their wording, as well as the macro distinction among the ways in which the Self can be defined (i.e., independent, interdependent, and relational). According to this idea, we clustered the items into two categories that give rise to the bi-factorial latent structure here shown. The first factor, named SELF, summarizes the four self-referential items (i.e., items that are written in the first person asking about personal mind-reading abilities used with respect to others). The self-referential items SELF are: #1, #2, #4, #6. The second factor, named SELF&OTHERS, groups the other four items (#3, #5, #7, #8) that, although being designed as other-directed, can equally refer to oneself (i.e., items that are written in an impersonal form result more general and potentially allow participants to think also about themselves). In this respect, we conducted a two-factor CFA. Results confirmed the goodness of the bi-factorial model, showing good fit indices (see Table 1).

All items significantly charged on the respective latent factors (>.40). Furthermore, considering gender as a potential element of differentiation with respect to the thematic here examined, gender multigroup analyses were conducted in order to test the invariance of the model (Steenkamp & Baumgartner, 1998). The Δ CFI and Δ RMSEA, with cut-off points

Table 1 (a) Fit indexes of the original model replicated in an Italian sample, One-factor model. (b) Fit indexes of the bi-factorial model proposed in the present study, Two-factor model

MBS structure	χ^2 (p)	Df, N	CFI	RMSEA (90% C.I.)
(a) One-factor	64.94 (.001)	20, 256	0.85	0.094 (0.069 – 0.12)
(b) Two-factor	33.63 (<.05)	20, 256	0.95	0.055 (0.022 – 0.058)

of $\Delta CFI < .01$ and of $\Delta RMSEA < .015$ (Chen, 2007), were used to evaluate the significance of the difference between the model tested on the two groups (in each step the model with a higher number of constrains was compared to the previous model). Firstly, we tested the configural invariance to identify the invariant structure across groups. Subsequently, metric and scalar factorial invariances were conducted in the two groups. Metric invariance was found (Table 2), whereas scalar invariance was not: three of the total pool of items could not be constrained to have the same intercept. In particular, item #4 (A stranger's character is revealed to me at first sight; Intercepts $M = 1.60$, $F = 1.786$); item #7 (It is hard to judge if somebody is lying or not by their appearance; Intercepts $M = 2.17$, $F = 1.70$); and, item #8 (It is not possible to say what a person actually feels by their covert behavior; Intercepts $M = 1.82$, $F = 1.49$). Then, in order to obtain the scalar partial invariance, these three items were unconstrained. Finally, the strict in-

variance was also computed showing acceptable parameters (see Table 2).

The internal reliability of the scale was tested by using McDonald's ω (McDonald, 1999), which is considered more accurate compared to the Cronbach's α (Revelle & Zinbarg, 2009). Results showed acceptable ω values (SELF $\omega = 0.69$; SELF&OTHERS $\omega = 0.61$) confirming the reliability of the scale supported by the two-factor model proposed in the present study.

MBS and Self-Construal

With the aim to deepen our understanding of the relation between awareness about one's own mind-reading abilities and self-construal, Pearson's correlation analyses were carried out among the different administered scales (IBM SPSS Statistics Version 23). Results showed a positive correlation between the MBS' factor SELF and the ISC_Id. Differently, the MBS factor SELF&OTHERS does not correlate with the Self-construal scale administered (see Table 3).

Table 2 MBS gender invariance

	χ^2 (Df)	RMSEA (90% C.I.)	CFI	$\Delta RMSEA$	ΔCFI
Configural	58.334 (38)*	0.065 (0.027 – 0.096)	0.937	-	-
Metric	75.874 (52)*	0.060 (0.026 – 0.088)	0.926	-0.005	0.011
Scalar	107.791 (60)	0.079 (0.054 – 0.103)	0.851	0.019	0.075
Scalar P.I.	82.577 (57)*	0.059 (0.027 – 0.086)	0.921	-0.020	-0.070
Strict	89.592 (59)*	0.064 (0.035 – 0.089)	0.905	0.005	0.016

Note. P.I. = Partial Invariance

* Significance of the Chi-Square test of model fit at the 0.05 level

Table 3 Pearson's correlation analyses between the two latent factors of MBS (SELF and SELF&OTHERS) and Self-construal scales, i.e., Independent Self-construal (ISC_Id), Interdependent Self-construal (ISC_It) and Relational-Interdependent Self-Construal (RISC)

MBS	ISC_Id	ISC_It	RISC
SELF	.169*	.159	.103
SELF&OTHER	.029	.068	.089

Note. * The correlations are significant at the 0.05 level (1-tailed)

Discussion

The first aim of the present research was to assess the psychometric properties of the MBS on an Italian sample comparing the original MBS unidimensional structure proposed by Realo et al. (2003) with a two-factor model latent structure using CFA, as well as its invariance based on a gender multigroup approach. Secondly, we investigated the relationships between the two latent factors of the model and the self-construal.

Data from the present study do not confirm the original exploratory structure proposed by Realo and colleagues showing poor model fit. The two-factorial model was evaluated through a confirmative approach. Results support the presence of two latent variables, SELF and SELF&OTHERS, which better capture the complexity of the construct. Analyzing the items content, in fact, the items written in the first person charged on the first factor, SELF, and reflected the participants' beliefs about their mind-reading abilities. These include, for example, the ability to anticipate others' reactions or responses in a conversational frame or lies recognition. On the other hand, the second latent factor, SELF&OTHERS, included those items that were written impersonally, i.e., the subject of the sentence was non-specific. As a matter of fact, MBS presents this self/other dualism expressed by four items that are written in the first person and by the other four items that are impersonal. With our model we bring support to the existence of this dualism when presenting items in the first person or impersonally (see Appendix 1 for the full items' wording and factor loading).

Items that compose the factor SELF say something about what exactly individuals think of their abilities in terms of mind-reading: by reading the items, it is clear that people should only refer to their own abilities. On the contrary, the

impersonal form of the SELF&OTHERS items invites people to weight the described abilities in relational terms; that is, it is not one's own specific mentalization ability, rather the ability that people generally express within a relational exchange. Therefore, the two-factor model, in which these two perspectives are considered and kept divided, appears to be more informative in that it better captures the two components associated with the individuals' beliefs about ToM abilities (Paal & Bereczkei, 2007). From a theoretical perspective, the two factors encompass both the Piagetian (Piaget, 1954) and the Vygotskian points of view (Vygotskij, 1978). The first factor is more solipsistic: taking the Piagetian position, the person is in the world without being influenced by contextual factors. On the other hand, the second latent factor calls for the intersubjective point of view, which also characterizes the individual use of mentalization skills. This interpretation is closer to the Vygotskian view, in which it is exactly the intersubjective sharing that defines how each person uses ToM skills. Nevertheless, both our latent factors led individuals to mentally figure out events in which they use ToM competences to judge their personal level of such abilities. This perspective is in line with Harris' simulation theory (1989, 1991), according to which children develop an understanding of other's mental contents by using a simulation mechanism based on their previous experiences of similar situations. Individuals infer mental states of others through the "work of imagination" (Harris, 2000), i.e., simulating what they would feel/think if they were that person and then generate the reaction (Goldman, 1989, 1992, 2006; Gordon, 1986, 1995; Heal, 1986; Harris, 1990, 1995a, 1995b; Harris, Johnson, Hutton, Andrews, & Cooke, 1989). In both cases, and namely, acting a behavior or judging a personal competence, the simulation process could be active, allowing people to use their self-knowledge in order to manage social interactions.

Furthermore, considering gender as a potential element of differentiation with respect to measurement of one's beliefs about personal ToM abilities, gender multigroup analyses showed no overall differences between women and men, supporting the robustness of MBS two-factor structure. Considering the intercepts of the underlying items, however, we found that women diverged from men on three items. It is important to note that this gender difference in our measurement affects the estimation of the two latent variables, determining a difficulty in directly comparing men and women on the construct's level. Thus, our results highlight that women respond differently from men on specific items of the MBS measurement, and suggest that future uses of this tool should take into consideration such differences.

With respect to the link between MBS and self-construal profiles, our results showed that the latent factor SELF correlated only with the independent-self construal. Findings on the SELF are in line with the hypothesis that self-construal is involved when MBS requests individuals to *clearly* express an opinion about themselves (Stapel & Koomen, 2001; Haberstroh, Oyserman, Schwarz, Kühnen, & Ji, 2002; Escalas & Bettman, 2005). In other words, self-construal is involved in a reasoning through which the individuals evaluate their socio-relational competences that involve recall to the Self. On the other hand, when MBS items are written in an impersonal form, such as in the SELF&OTHER dimension, their interpretation in terms of self-construal appears to be inapplicable. More specifically, a MBS item falling within the SELF&OTHER category prompts reasoning about a general situation that may involve a more empirical rather than introspective thinking. For example, the MBS sentence "It is hard to judge if somebody is lying or not by their appearance" does not necessarily describe or involve any typologies of Self (independent or interdependent), because – at this

level – the theoretical constructs of MBS and self-construal appear to not combine.

Particular attention goes to the RISC scale. The scale – so as used in this study – proved to be unreliable in assessing the construct of relational-interdependent self-construal in our sample. In fact, the confirmatory analysis that we carried out to evaluate the reliability of RISC highlighted some important limits of the scale, at least in our Italian sample. That is, to obtain acceptable reliability indexes, it was necessary to remove 5 out of 11 total items. This result stresses the ambiguity dimension that precisely characterizes this construct, which embeds both the dimension of a Self that is built interdependently, and the tendency to think of oneself in terms of relationships with close others. This observation necessarily prompts further exploration of the multidimensionality of the Relational-Interdependent Self-Construal construct.

Generally, the present results support the usefulness of investigating the nature of beliefs about ToM skills, which can be briefly defined as a meta-knowledge about ToM that ought to take into account its different dimensions. The latter point further puts emphasis on the idea that the original unidimensional model, while having the advantages of shortness and simplicity, has also the potential limit of not fully capturing the richness of belief-related contents. With our two-factor model we suggest that this limit can be in part overcome by specifying the distinction between Self and Others associated to beliefs about one's mind-reading abilities.

From a clinical perspective, the MBS could be useful to expand the pool of ToM tasks currently used to assess theory of mind competences in patients, especially those with neurodegenerative pathologies. In fact, several studies have shown how social cognition competences are impaired in several clinical populations as an effect of the patient's pathological condition (Mohr, Classen, & Barrera, 2004; Grytten & Måseide,

2006). In particular, MBS could be useful to explore the patient's perception of his/her social competences in order to understand, for example, if a rehabilitation program focused on social competences is not only effective in terms of improvements of such abilities, but also in terms of self-awareness. Moreover, this scale could be usefully employed to assess the caregivers' representation of their mind-reading competences since their own social skills may be at risk of impairment due to the daily interaction (often in the absence of socio-psychological support) with people affected by neuro-degenerative diseases. Finally, in order to implement the potential of the MBS as an assessing tool, future studies should explore a development of the MBS, which takes also into account the link here emerged with self-construal, trying to better understand how the distinction between Self and Other in defining beliefs on ToM abilities contributes to self-shaping, as well as a possible link with ToM performances.

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Appendix

Appendix 1. Table shows the full wording of Mind-reading Belief Scale's items as proposed in the original work from Realo et al. (2003) divided in the two latent variables (Self and Self&Other) explored in the present study and the respective factor loading according with the standardized model results. All factor loadings are significant ($p < 0.001$).

<i>Two-factors model of Mind-reading belief scale</i>		
		<i>Factor Loading</i>
<i>Factor: Self</i>		
Item 1	Usually, I know beforehand what my conversation partner is going to say	0.608
Item 2	I can read people's intentions in their faces	0.657
Item 4	I can read people's intentions in their faces	0.561
Item 6	I do not think I am good at knowing human nature/ judging people	0.524
<i>Factor: Self&Other</i>		
Item 3	It is possible to deduce from a persons' attitude what they are going to do next	0.423
Item 5	It is hard to tell a persons' thoughts by their looks	0.592
Item 7	It is hard to judge if somebody is lying or not by their appearance	0.676
Item 8	It is not possible to say what a person actually feels by their covert behavior	0.522