



Research Paper

Development and validation of the Adult Attachment Trauma Questionnaire (AATQ)

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ABSTRACT

Despite the wide use of the concept of Attachment Trauma (AT) in clinics and research, there is a scarcity of proper assessment tools. This work aims to fill this gap by outlining the development and validation of the *Adult Attachment Trauma Questionnaire* (AATQ). The preliminary item pool covered eight conceptual domains: Conflict, Attachment-related Dissociation, Attachment Phobia, Victim, Compulsive Savior, Dangerous Self, Revengeful Perpetrator, and Sadistic Perpetrator. The items were analyzed through two pilot studies. After revising the items according to the results, the final pool underwent factorial, convergent, and incremental validity analyses in a general sample of 407 Italian adults. The EFA supported the eight-factor structure. Validity analyses demonstrated excellent convergent and predictive validity across all questionnaire subscales, except for two of them (Compulsive Savior, Sadistic Perpetrator) that did not exhibit good performance and were subsequently removed. The AATQ final version consisted of six subscales and 28 total items and was confirmed in a further EFA. The AATQ performed better than a popular fearful/disorganized attachment measure (*Adult Disorganized Attachment* scale) and a standard measure of adult attachment (*Emotions in Close Relationships*) in predicting traumatic and pathological outcomes.

In the last two decades, there has been an increasing interest in the concept of Attachment Trauma (AT) in both the scientific and clinical literature (e.g., Allen, 2018; Farina et al., 2019; Fonagy et al., 2023; Isobel et al., 2019; Kobak et al., 2004; Schore, 2009; UCL, 2023; Spinazzola et al., 2021). A recent review categorized six lines of research related to AT (Zagaria et al., 2024) and defined it as the “varying and long-lasting biological, psychological, and relational consequences resulting from incomplete encoding and integration of emotionally overwhelming experiences within an attachment relationship” (Zagaria et al., 2024, p. 7).

In parallel with the heterogeneity surrounding the concept of AT, existing measures do not seem to assess it efficiently in adults. On the one hand, there are measures addressing traumatic and/or dissociative symptoms in general. Examples of these measures include the *Dissociative Experiences Scale II* (DES; Carlson & Putnam, 1993), the *PTSD Checklist Civilian Version* (Weathers et al., 1993), and the *International Trauma Questionnaire* (ITQ; Cloitre et al., 2018). However, such instruments typically do not establish a connection between traumatic symptoms and *attachment theory*. They primarily serve as tools for assessing trauma or dissociation in a general sense rather than directly

targeting adult AT (see Dalenberg & Briere, 2017, for a review of the most frequently used trauma measures).

On the other hand, there are questionnaires investigating attachment in general, such as the *Emotions in Close Relationships* scale (ECR; Brennan et al., 1998; for an overview of the most common measures used in attachment studies in adults, see Ravitz et al., 2010). Specific measures also investigate fearful/disorganized attachment in adults (Pollard & Bucci, 2023). As much as trauma measures are not usually linked to attachment theory, the majority of the attachment self-reports are not directly tied to *trauma theory* either.

AT may be framed as the *consequences* of overwhelming experiences in an attachment relationship (Zagaria et al., 2024). Typically, AT arises from early attachment relationships in infancy, but it might also stem from adult attachment relationships, such as those involving Intimate Partner Violence (Zagaria et al., 2024). Common manifestations of AT include fear of intimacy, approach-avoidance behaviors, the resurgence of dissociated attachment-related memories, and controlling behaviors in intimate relationships (e.g., punishing, caregiving, sexualizing) (Zagaria et al., 2024).

There is a fundamental difference between AT and Disorganized

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Attachment (DA). Contrary to a common misconception, DA is exclusively a pattern of behaviors observed experimentally between 12 and 20 months of age (Granqvist et al., 2017). It is neither a diagnosis nor a trait-like characteristic that extends into adulthood, as it is sometimes incorrectly stated (e.g., Paetzold et al., 2015; Pollard et al., 2020, 2023). While DA may be "a behavioral manifestation of AT in early infancy" (Zagaria et al., 2024), AT is a much broader concept.

Fearful/disorganized attachment self-reports are mainly operationalized around the concept of *fear* of intimacy - i.e., longing for an intimate relationship but at the same time being afraid of it (see Pollard & Bucci, 2023; Simpson & Rholes, 2002; Zagaria et al., 2024). Adults with AT, however, manifest a very diverse range of psychological phenomena beyond fear of intimacy, including conflict, depression, anger, shame, revenge, and control (see Liotti, 2009, 2011, 2017; DePrince et al., 2010; Zagaria et al., 2024).

In sum, despite the wide usage of the adult AT concept in clinics and research, there seems to be a scarcity of measures investigating it properly. The current work aims to fill this gap and develop a new self-report, the *Adult Attachment Trauma Questionnaire* (AATQ). In line with the tradition of personality and social psychology, we focused on attachment as displayed in adult romantic relationships (Duschinsky, 2020, ch.5). We deduce that AT has occurred *retrospectively* based on its current symptoms, like most trauma measures do (Dalenberg & Briere, 2017). At the time of speaking, the primary aim of the instrument is to assess AT in the general population as a continuous trait-like construct. However, studies on clinical samples are now in the planning stage.

Developing the AATQ items

After conducting an integrative review on AT (Zagaria et al., 2024) the initial pool of items was developed in Italian. Subsequently, a clinical exchange with a pool of three psychotherapists from Northern Italy was carried out. Eventually, the items were translated into English and reviewed and changed according to specific comments provided by two international scholars renowned in attachment studies and two international scholars renowned in psychotraumatology. The main studies used the Italian version of the questionnaire.

The items were developed around 8 domains. They were conceptually grounded in Giovanni Liotti's work on traumatic attachment (Liotti, 1992, 1995, 1999, 2004, 2006, 2009) and the literature about approach-avoidance conflict (Bartholomew, 1990; Hesse & Main, 1999, 2006; Liotti, 2011, 2017; Main & Solomon, 1986, 1990; Simpson & Rholes, 2002). Some conceptual nuances have been introduced *ex novo*.

The first domain - Conflict - refers to approach-avoidance attitudes in adult intimate relationships. Instance item reads: *"I feel the need to get closer to my partner, then immediately after I feel the need to get away from them"*¹. Conflict behaviors were already noted by Bowlby (1969), and paradigmatically observed in the *Strange Situation Procedure* (SSP) in children (Hesse & Main, 1999, 2006; Main & Solomon, 1986, 1990). The approach-avoidance conflict was subsequently studied also in adult intimate relationships through self-reports (Bartholomew, 1990; Simpson & Rholes, 2002) and clinical observation (Liotti, 2011, 2017).

The second domain - Attachment-related Dissociation - is about dissociation as linked to the activation of attachment. According to Liotti (2004, 2006, 2009), whenever the attachment system is traumatized, each of its subsequent activations may trigger symptoms of compartmentalization and alterations in consciousness (Holmes et al., 2005). Instance items read: *"When my partner rejects me, I feel numbed or emotionless"* or *"When my partner rejects me, I do not recognize my body, as if it belonged to another person"*.

The third domain is about Attachment Phobia, which may be understood as the desperate effort to suppress the activation of the attachment system. This is acted to prevent the resurfacing of traumatic

memories associated with it (Liotti, 2013). Instance item reads: *"I do everything I can so that my partner will never see me as weak"*.

The remaining domains are inspired by the *drama triangle*. The drama triangle - originally formulated by Karpman (1968) in transactional analysis - posits that individuals act following a given "script". According to the drama triangle, individuals shift between three major roles: The victim ("Poor me!"), the savior ("Let me help you"), and the persecutor ("It's all your fault").

Liotti transferred the concept of the drama triangle to the field of psychotraumatology (Liotti, 1992, 1995, 1999, 2004, 2006, 2009). The early interaction with one's caregiver is internalized in interpersonal schemata and later reenacted in adulthood. Specifically, the interaction with a frightening or frightened caregiver induces in the child a multiplicity of traumatic interpersonal schemata revolving around the three roles of the drama triangle (victim, savior, or persecutor). Such roles will be later acted with the adult partner (Liotti, 2004; see also Blizard, 2001).

The first aspect of the drama triangle, which is the fourth domain of the overall questionnaire, is Victim. The attachment system is the physiological means to regulate fear in early childhood by ensuring the proximity of the caregiver (Duschinsky, 2020, ch.1). However, if the caregiver is angry or punitive when the child tries to approach, the latter will associate the need for proximity with the feeling of fear and humiliation. He/she will project these cognitions in romantic relationships later in life. Instance item reads: *"If I get close to my partner, they will humiliate me"*.

The fifth and sixth domains are Compulsive Savior and Revengeful Perpetrator, respectively. When dealing with a frightened or frightening caregiver, the child learns that the best way to regulate the interaction is to look after the caregiver ("role-reversing") or, conversely, to punish them (Main & Cassidy, 1988; van IJzendoorn et al., 1999; Wartner et al., 1994). These "compulsive-caregiver" or "punishing" attitudes will be later replayed in adult intimate relationships. Instance items are respectively *"When my partner hurts me, they need my help"* for the Pathological Savior and *"If my partner betrays my trust, I will make them pay"* for the Revengeful Perpetrator.

The seventh domain is Dangerous Self. It is the first conceptual novelty of the study. It stemmed from a clinical intuition. If the caregiver is scared or dissociatively detached in response to the activation of the child's attachment system (Hesse & Main, 2006; Main & Hesse, 1990), then the help-seeking child may perceive themselves as an attacker, shouldering responsibility for the caregiver's pain and disorientation (Main & Hesse, 1992/2021). This, in turn, will shape adult attachment relationships, where the individual views their attachment needs as something potentially frightening and destructive to the partner. Instance item reads: *"If I express all my needs, I will scare my partner"*. The perception of oneself as guilty/defective/shameful/hideous² is indeed one common aftermath of trauma and complex trauma (Hyland et al., 2023; Lee et al., 2001). Attachment research has also investigated, even though scantily, the relationship between insecure attachment or DA and shame-proneness (Park & Shields, 2023).

However, to the best of our knowledge, the specific link to the activation of the attachment system and the aforementioned dynamics with the caregiver has been only hinted at by Main and Hesse (1992/2021). Clinical observations of the core beliefs of patients with AT have led us to consider the specific nuance of attachment needs as something inherently dangerous.

The eighth domain is Sadistic Perpetrator. It is the second novel conceptual nuance introduced in the study. While clinical accounts have recognized "destructive" dynamics in the aftermath of AT (Blizard 2001;

¹ In the items, they/they is always used to indicate the partner.

² Given the intricacies in disentangling between guilt and shame the two concepts are here grouped for simplicity, but note that some researchers have attempted to clarify the differences between the two (Miceli & Castelfranchi, 2018; Teroni & Deonna, 2008).

Liotti 1992, 1995, 1999, 2004, 2006, 2009; see also the paragraph on the Revengeful Perpetrator), less attention has been given to the different types of destruction. Destruction due to revenge—being destructive towards those neglectful or abusive to obtain justice (Blizard, 2001; see also the paragraph on Revengeful Perpetrator)—has been conflated with sadistic destruction, which involves “contacting” the attachment need by dissociating it and then humiliating it (e.g., Blizard, 2001).³

We speculated that the two types of perpetration may be different. Specifically, we hypothesized that revenge is directed towards someone neglectful or abusive, while sadism is directed towards someone fragile and in need. When revengeful, the individual seeks proximity by controlling the activation of the caregiver; when sadistic, the individual seeks proximity by projecting their vulnerability and humiliating it in weaker individuals. Instance item reads: “*If my partner is fragile, I feel like wanting to hurt them*”.

Pilot studies

The initial step in developing the AATQ was to establish face validity (see Allen et al., 2023). In January 2023, 38 PhD candidates of the University of Trento rated the initial pool of items according to their perceived clarity. The items were administered online through the Qualtrics software and each one of them had three answer options: “Clear”, “Not Clear”, or “Not entirely Clear”. At the end of the administration, the students were asked to provide explanations/suggestions for the items they had not understood. We slightly rephrased some items for clarity and dropped others according to the results.

Subsequently, in March 2023, we administered the refined version of the AATQ online through Qualtrics to 78 undergraduates of the same University. Items were endorsed on a 7-point Likert scale where 1 indicates no agreement at all and 7 total agreement. The distributional properties of the items and the reliability index for each *a priori* domain (reliability indices, item-total correlation) were analyzed.⁴

The distribution of the items was expected to be right-skewed, consistent with clinical phenomena investigated in the general population (Bono et al., 2017; Delucchi & Bostrom, 2004; Rutter & Miglioretti, 2003; Tyrer et al., 2005; Wright et al., 2011; Zimmerman et al., 2004). We were particularly attentive to items that were at least two of the following: non-right-skewed, had item-total correlation in the respective domain < 0.30 (e.g., Cristobal et al., 2007), or exhibited floor effects. Taking these considerations into account, we removed 3 items. We also removed further 4 items that were originally reverse-formulated (see Suárez Álvarez et al., 2018) and reworded further 6 items. The final pool consisted of 70 items. The main study consisted of the effective validation of the questionnaire through an Exploratory Factorial Analysis (EFA) and validity analyses.

Method

Participants

We recruited 429 adults on the online platform Prolific, which is considered a provider of high-quality data in the general population (Douglas et al., 2023). The questionnaire was administered through Qualtrics. Participants were screened in the following way: Balanced for

sex (equal number of females and males), Italian as first language, residence in Italy, from 24 to 40 years of age,⁵ 100 % approval rate on Prolific (which is an indicator of response quality), at least 5 submissions on Prolific (which is an indicator of familiarity with online surveys). The participants took a median time of 31 minutes and 17 seconds to complete the survey and were paid 6.71 pounds on average per hour. The survey took place between the end of June and the beginning of July 2023. The main study and the pilot studies have been approved by the Ethical Committee for Research of the University of Trento (Protocollo 2022–043).

Measures

Demographics and clinical data. Participants were asked to report their demographic and health-related data. The following was collected: Age (in years), gender (male/female/other/prefer not to say), sex (male/female), occupational status (unemployed, student/in a traineeship, employed, working student), education (primary school, secondary school, high school, university - bachelor or master degree, Ph.D.), relational status (in a stable relationship, divorced, single, married, widowed), self-reported psychiatric diagnosis, reported psychiatric diagnosis on first-degree relatives, being currently in psychotherapy, having been in psychotherapy, being currently on psychopharmacotherapy, having been on psychopharmacotherapy.

Adult Attachment Trauma Questionnaire (AATQ). As previously described, the initial pool included 70 items across 8 domains. The items were ranked on a 7-point Likert scale, ranging from “*Not at all*” to “*Completely*”. The original items and a preliminary English translation of them may be requested by contacting the corresponding author. The majority of items were created *ex novo* and a few were inspired from existing measures (see Appendix A for those retained in the final version with the corresponding “inspiring” measure). Note that we did not directly adapt the items, rather we reformulated them in the context of romantic relationships. For instance, item 3 of the *Cambridge Depersonalization Scale* (CDS; Sierra & Bierros, 2000) is “*Parts of my body feel as if they didn’t belong to me*”. Item 15 of the final version of the AATQ is “*When my partner rejects me, parts of my body feel as if they did not belong to me*”. The presentation of items for the AATQ was completely randomized.

International Trauma Questionnaire (ITQ). Trauma-related psychopathology was investigated through the ITQ (Cloitre et al., 2018; Italian version by Rossi et al., 2022). The ITQ initially identifies the respondent’s self-reported most traumatic event, and participants are directed to respond to all questions about this specific event. Responses to all 18 ITQ items are recorded using a 5-point Likert scale, spanning from 0 (*no presence*) to 4 (*high presence*). These included categorical diagnoses of Post-Traumatic Stress Disorder (PTSD) or Complex Post-Traumatic Stress Disorder (cPTSD) and dimensional scores of PTSD and Disturbances in Self Organization (DSO). In our sample, reliabilities were good for the PTSD dimension (Cronbach’s $\alpha = 0.85$, Hierarchical Omega $\omega_h = 0.77$) and for the cPTSD dimension ($\alpha = 0.85$, $\omega_h = 0.71$).

Post-Traumatic Cognition Inventory 9 (PTCI 9). The PTCI-9 (Wells et al., 2019, Italian translation by the first author, back-translated by a Ph.D. candidate of the University of Trento proficient in English) is a 9-item version of the PTCI (Foa et al., 1999), employing a 7-point Likert scale. It measures the individual cognitive response to trauma across three subscales (negative cognition about the self, negative cognitions about the world, self-blame). The trauma is self-identified. The

³ The same conflation is present in the scientific literature, where attachment insecurity or DA is linked to externalizing behaviors or antisociality (Fearon et al., 2010; Madigan et al., 2016; Van IJzendoorn, 1997), and childhood maltreatment is connected to antisociality or psychopathy (Braga et al., 2018; De Ruiter et al., 2022), without distinguishing between “revenge-driven” and “sadistic-driven” behaviors.

⁴ Note that we can not share this data due an agreement with Ethical Committee.

⁵ We decided to focus on people above 24 because a large part of Prolific users is made up of university students (Prolific, n.d.), a sample that is associated with several methodological problems (Porter, 2011). Setting the age lower bound to 24 was intended to mitigate the recruitment mainly of students. On the other hand, the upper bound of 40 was chosen because is often considered the end of young adulthood (Arnett et al., 2014).

reliability index in our sample for the total score was good ($\alpha = 0.87$), with a lower $\omega_h = 0.69$.⁶

Difficulties in Emotion Regulation Scale (DERS). The DERS (Gratz & Roemer, 2004; Italian version by Giromini et al., 2012) consists of thirty-six items on a 6-point Likert scale investigating the ability to regulate one's emotions. It covers different subscales, including *a*) nonacceptance of emotional responses, *b*) difficulty engaging in goal-directed behavior, *c*) impulse control difficulties, *d*) lack of emotional awareness, *e*) limited access to emotion regulation strategies, *f*) and lack of emotional clarity. Reliabilities were good or acceptable in our sample but for the *b* subscale, that is: *a*) ($\alpha = 0.91$, $\omega_h = 0.84$), *b*) ($\alpha = 0.88$, $\omega_h = 0.29$), *c*) ($\alpha = 0.89$, $\omega_h = 0.86$), *d*) ($\alpha = 0.81$, $\omega_h = 0.62$), *e*) ($\alpha = 0.92$, $\omega_h = 0.89$), *f*) ($\alpha = 0.9$, $\omega_h = 0.87$).

Inventory of Interpersonal Problems 32 (IIP 32). The IIP-32 (Horowitz et al., 2000; Italian Version by Lo Coco et al., 2018) consists of 32 items where participants are prompted to assess challenges with a significant individual in their life using a rating scale ranging from 0 (*no difficulty*) to 4 (*extreme difficulty*). The IIP-32 measures interpersonal difficulties through 8 subscales, including *a*) domineering, *b*) vindictive, *c*) cold, *d*) socially inhibited, *e*) non-assertive, *f*) over-accommodating, *g*) self-sacrificing, and *h*) intrusive/needy. Reliabilities were good or acceptable in our sample *a*) ($\alpha = 0.73$, $\omega_h = 0.61$), *b*) ($\alpha = 0.81$, $\omega_h = 0.77$), *c*) ($\alpha = 0.81$, $\omega_h = 0.76$), *d*) ($\alpha = 0.89$, $\omega_h = 0.88$), *e*) ($\alpha = 0.82$, $\omega_h = 0.81$), *f*) ($\alpha = 0.72$, $\omega_h = 0.69$), *g*) ($\alpha = 0.75$, $\omega_h = 0.65$), *h*) ($\alpha = 0.81$, $\omega_h = 0.65$).⁷

Measure of Parenting Style (MOPS). The MOPS (Parker et al., 1997; Italian version by Picardi et al., 2013) comprises 30 items investigating the self-reported relationship with one's parents (15 items for the father, and 15 items for the mother⁸). Each item is assessed on a 4-point Likert scale ranging from 0 (*not true at all*) to 3 (*very true*). The items are further categorized into three subscales for each parent: Neglect, Overcontrol, and Abuse. Reliabilities are good for each subscale except for the Overcontrol subscales - maybe biased to the low number of items (i.e., 4); maternal neglect ($\alpha = 0.88$, $\omega_h = 0.83$), maternal overcontrol ($\alpha = 0.76$, $\omega_h = 0.58$), maternal abuse ($\alpha = 0.85$, $\omega_h = 0.70$), paternal neglect ($\alpha = 0.85$, $\omega_h = 0.70$), paternal overcontrol ($\alpha = 0.66$, $\omega_h = 0.46$), paternal abuse ($\alpha = 0.89$, $\omega_h = 0.80$).

Dissociative Experiences Scale II (DES II). The DES II (Carlson & Putnam, 1993; Italian version by Schimmenti, 2016) assesses dissociative symptoms related to consciousness absorption, identity alteration, and derealization/depersonalization through 28 items on an 11-point scale. Participants indicate the frequency with which they perceive these phenomena occurring, ranging from 0 % to 100 %. The symptoms were assessed using the total mean score and the taxon score (Waller et al., 1996). In our sample, reliability was good ($\alpha = 0.92$, $\omega_h = 0.73$).

Emotions in Close Relationships (ECR). The ECR (Brennan et al., 1998; Italian version by Picardi et al., 2000) examines adult attachment patterns within intimate relationships using a 7-point Likert scale across 36 items. These items are divided into two distinct scales: 18 items portray anxiety, while the remaining 18 depict avoidance. In our sample, reliabilities were good for the avoidance dimension ($\alpha = 0.95$, $\omega_h = 0.71$) and for the anxiety dimension ($\alpha = 0.95$, $\omega_h = 0.71$).

Adult Disorganized Attachment scale (ADA). The ADA (Paetzold et al.,

2015; Italian translation by the first author, back-translated by a Ph.D. candidate of the University of Trento proficient in English and approved by the original authors) is a tool designed to explore fear within intimate relationships, especially focusing on fear of being taken advantage of or abused, lack of trust, and confusion about one's identity in intimacy. It consists of 9 items rated on a 7-point Likert scale. In our sample, reliability was good ($\alpha = 0.86$, $\omega_h = 0.77$).

We also incorporated five attention checks, such as "Some readers may become distracted while compiling a questionnaire. What is the sum of 2 plus 1?" evenly distributed through the survey. Table 1 reports the mean, standard deviation, and range for each questionnaire scale.

Data analytic plan

The analyses were performed with the software R (Version 4.3.2; R Core Team, 2023), especially using the package *psych* (Revelle, 2017). Participants who did not pass all the attention checks, spent < 4 seconds on average for each item of the survey, or did not provide a clear answer to the ITQ question for the description of the most traumatic event, were removed. The analysis continued with an exploration of sample demographics. AATQ items were then analyzed in terms of their distributions. A Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was run to find out the degree of common variance available for factor analysis. Subsequently, a Parallel Analysis (PA) was run to select the

Table 1
Mean, SD, Range of the administered measures.

Measure	Mean	SD	Range
ADA	21.2	9.37	9 - 51
DERS; Nonacceptance of emotional responses	15.58	6.05	6 - 30
DERS; Difficulty engaging in goal-directed behaviour	15.8	4.68	5 - 25
DERS; Impulse control difficulties	12.78	5.03	6 - 30
DERS; Lack of emotional clarity	11.5	4.24	5 - 24
DERS; Lack of emotional awareness	15.08	4.63	6 - 30
DERS; Limited access to emotion regulation strategies	20.88	7.76	8 - 40
DERS; Total	91.6	25.03	41 - 164
DES; Total	15.73	11.43	0.71 - 73.93
DES; Taxon	9.03	10.48	0 - 68.75
ECR; Avoidance	2.7	1.14	1 - 6.22
ECR; Ambivalence	3.61	1.16	1.06 - 6.78
IIP; Domineering	2.46	2.8	0 - 16
IIP; Vindictive	3.57	3.46	0 - 16
IIP; Cold	4.72	3.83	0 - 16
IIP; Socially inhibited	7.93	4.87	0 - 16
IIP; Non-assertive	7.14	4.12	0 - 16
IIP; Overly accommodating	7.33	3.71	0 - 16
IIP; Self-sacrificing	5.81	3.85	0 - 16
IIP; Intrusive/needy	3.71	3.69	0 - 16
IIP; Total	42.68	19.76	0 - 108
ITQ; Dimensional PTSD	6.46	5.63	0 - 24
ITQ; Dimensional DSO	10.51	6.1	0 - 24
MOPS; Indifference, mum	2.46	3.37	0 - 18
MOPS; Indifference, dad	4.59	5.13	0 - 18
MOPS; Abuse, mum	2.22	2.95	0 - 15
MOPS; Abuse, dad	2.56	3.69	0 - 15
MOPS; Control, mum	5.31	3.32	0 - 12
MOPS; Control, dad	3.05	2.74	0 - 12
MOPS; Mum total	10	7.97	0 - 45
MOPS; Dad total	10.2	9.61	0 - 42
MOPS; Total	20.19	15.38	0 - 75
PTCI; Negative self-cognition	2.71	1.6	1 - 7
PTCI; Negative cognition about the world	3.84	1.54	1 - 7
PTCI; Self-blame	3.03	1.73	1 - 7
PTCI; Total	3.2	1.3	1 - 6.33

Note. ADA = Adult Disorganized Attachment scale, DERS = Difficulties in Emotion Regulation, DSO = Disturbances in Self Organization, ECR = Emotions in Close Relationships, IIP = Inventory of Interpersonal Problems, ITQ = International Trauma Questionnaire, MOPS = Measure of Parenting Style, PTSD = Post Traumatic Stress Disorder, PTCI = Post-Traumatic Cognition Inventory.

⁶ The low omega makes indeed sense because the PTCI has three subscales. However, it did not seem reasonable to investigate them separately due to the low number of items (3).

⁷ We used the *omega* function (*psych* package in R, see below) throughout the measures investigated (with 3 specific factors extracted to compute omega) except the intrusive/needy subscale, which led to a negative value of alpha. We set the specific factors to be 2 in this case.

⁸ Note that the instructions were slightly modified for the items to be applied not only to mothers or fathers but to primary caregivers in general, in case the "mother" or "father" category did not apply (single-parent families, same-sex parent families, etc.).

number of factors to be extracted. PA is one of the most valid ways of unraveling the appropriate number of factors (Auerwald & Moshagen, 2019; Lim & Jahng, 2019). The PA EFA method was chosen.

Then, an Exploratory Factor Analysis (EFA) was run with Unweighted Least Squares (ULS) estimation method with Oblimin rotation. The Oblimin rotation was chosen because we expected inter-factor correlations, and we wanted to minimize the variables' complexity instead of the factors' complexity - that is, we preferred to maximize the loadings of the variables on the factors rather than minimize inter-factor correlations (Sass & Schmitt, 2010). The factorial model was chosen according to theoretical consideration and an examination of fit indexes. A set of items was chosen for each one of the factors retained by looking at the best loadings and by theoretical considerations. Both the subscales and the total score of the AATQ were examined for convergent, predictive, and incremental validity, by means of correlation and regression analyses with the other measures.

Regarding incremental validity, we used the DERS (total score), ITQ (PTSD and DSO subscales), PTCI (total score), and MOPS (total score) as outcome measures. We examined the AATQ total score in comparison to two other adult attachment measures, namely the ECR (through its subscales of avoidance and ambivalence) and ADA (total score). The methodology consisted of a series of multiple linear regressions with nested models, scrutinizing ΔR^2 through a series of *F*-tests. In essence, we investigated if the reduced model (with only the ECR or the ADA, or with both) was significantly improved by the extended model (where the AATQ was included), and the magnitude of the ΔR^2 . Similarly, we examined backward if the nested model (with only the AATQ) was significantly improved by the extended model (where the ECR or the ADA were included).

The subscales and total scores were eventually analyzed using descriptive statistics and examined across various demographics (sex, age, education, relational status, psychological diagnosis, and use of psychiatric drugs). Due to the non-normality of the distributions, Spearman Rho correlations and Mann-Whitney U tests were employed. Specifically, we treated education as an ordinal variable and dichotomized relational status as follows: those who reported being in a stable relationship or married were categorized as "in a stable relationship", while those who reported being single or separated/divorced were categorized as "single." Regarding psychological diagnosis, we considered only the personal diagnosis and not that of first-degree relatives. The use of psychiatric drugs was considered "in the past" to include everyone who had ever used them in their lifetime.

Results

Participants

After the removal of unreliable responses (22 individuals, 5.1 % of the initial sample), the final sample consisted of 407 participants. The mean age of the sample was 29.06 ($SD = 5.53$), and the sample was balanced by sex, with 209 females (51.35 %), and 198 males (48.65 %). Concerning occupational status, the majority was employed (45.95 %), student/in traineeship (25.31 %), working student (16.22 %), and unemployed (12.53 %). Regarding relational status, 51.60 % were in a stable relationship, 41.28 % were single, 6.88 % were married, and 0.25 % were divorced. No one declared themselves as widowed.

The participants' educational background included 0.25 % with primary school, 0.98 % with secondary school, 30.96 % with high school, 64.86 % with a university degree, and 2.95 % with a PhD. Regarding psychological/psychiatric diagnoses, 15.48 % had a diagnosis, 81.08 % did not, and 3.44 % preferred not to say. For diagnoses in first-degree relatives, 17.44 % reported a diagnosis, 80.59 % did not, and 1.97 % preferred not to say. In terms of psychotherapy, 43.98 % had therapy in the past, 55.28 % did not, and 0.74 % preferred not to say. At the time of the survey, 18.92 % were in therapy, 80.84 % were not, and 0.25 % preferred not to respond. For psychopharmacotherapy, 15.97 %

used it in the past, 83.78 % did not, and 0.25 % preferred not to say. At the time of the survey, 6.39 % used psychopharmacotherapy, while 93.61 % did not.

Each AATQ item's distribution across the Likert scale was investigated, revealing predominantly highly right-skewed distributions. Figure S1 (please refer to the Supplementary Material for all tables and figures preceded by an "S") illustrates the median percentages across all items, depicting the "average" AATQ distribution.

The Pearson correlation matrix of the preliminary AATQ items revealed within-domain correlations as expected, some cross-correlations between domains, and an unexpected weak correlation pattern for the Compulsive Savior domain (see Figure S2).

Factorial validity

The KMO yielded an acceptable degree of common variance ($KMO = 0.88$). The PA EFA was performed subsequently. As the items were highly skewed, we opted for a ULS extraction method (MacCallum et al., 2007; Revelle, 2017).

Regarding PA, the standard scree plot and the rescaled one (with the squared rooted eigenvalues) with actual and simulated eigenvalues, might be consulted in Figure S3, S4. Here the more interpretable differences between the sample eigenvalues and the simulated ones is considered; results of the PA are reported in Fig. 1.

Given the nature of slight variations in results between the two solutions (Turner, 1998), PA EFA suggested retaining 8/9 factors. We opted to explore models ranging from 5 to 9 factors and select the most interpretable one. Given the trend observed in eigenvalues within the PA, our anticipation leaned towards either a 6 or 8-factor solution.

The factors were then extracted and rotated through the Oblimin rotation. The only clearly interpretable model was the one with 8 factors, which aligned perfectly with our theoretical expectations. It was also the best in terms of fit indexes (Table 2), having the lowest BIC (Kuha, 2004).

In Table 3, the pattern matrix for the eight-factor solution is shown. Note that each item is named according to its ordered position in the respective domain. We displayed only factor loadings greater than 0.32 (Costello & Osborne, 2019). In the eight-factor solution, each factor corresponds closely to the hypothesized theoretical domain. From the first factor to the eighth one, they were labeled as follows: Victim, Conflict, Attachment-Related Dissociation, Dangerous Self, Attachment Phobia, Revengeful Perpetrator, Compulsive Savior, Sadistic Perpetrator.

Loadings were satisfactory, with the majority of cross-loadings being on items with small saturations. Amongst the items that did not saturate on the factor designated a priori and that did not have small loadings we find "Victim 16" ("As soon as my partner gets to know me fully, they will realize that there is something awful inside me"), which indeed makes sense to be part of Dangerous Self, as it associates intimacy with something destructive for the other. The other significant cross-loading is "Victim 5" ("I want intimate relationships, but being emotionally close to somebody frightens me") loading on the Conflict factor, which also sounds reasonable.

The other items that did not load onto the reference factor but instead onto the Dangerous Self factor were: "Att pho 4", "Sad per 1", "Victim 17", "Savior 2", "Per sad 3" (see the note below Table 3 to the disambiguation of the abbreviations).

Such items seem to be associated with a vision of a destructive self-image. The unexpected saturations on the Sadistic Perpetrator factor, on the other hand, do not seem particularly substantial.

Globally, the eight factors explained 54.8 % of the variance of the items (Table 4). The variance is spread quite evenly; the first three factors each account for approximately 9 % of the variance, the next three range from 5.5 % to 7 %, and the last two, Compulsive Savior and Sadistic Perpetrator, are relatively small (4.5 % and 3.3 %, respectively).

Inter-factor correlations (see Table S2) generally fall within the range

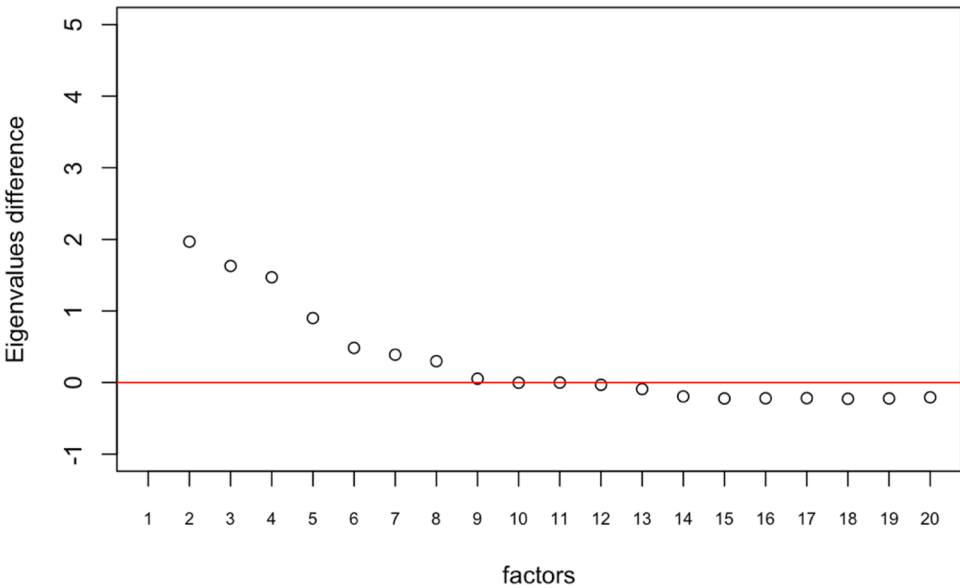


Fig. 1. Differences between actual and simulated eigenvalues through a PA EFA.
Note. Please note that the difference in the first factor is not shown because is higher than 5 and thus was deleterious for a clear visualization of the data; note also that only the first 20 eigenvalues are shown.

Table 2
Fit indexes for the different models explored with the EFA.

Model	χ^2 (df)	RMSEA (90 % CI)	TLI	RMSR	BIC
5 factors	5587.95(2075)***	.064 (0.063 - 0.067)	.769	.04	-6880.34
6 factors	5048.59(2010)***	.061 (0.059 - 0.063)	.793	.04	-7029.12
7 factors	4524.19(1946)***	.057 (0.055- 0.059)	.818	.03	-7168.96
8 factors	4068.36(1883)***	.053 (0.051- 0.056)	.84	.03	-7246.23
9 factors	3774.7(1821)***	.051 (0.049- 0.054)	.852	.03	-7167.35

Note. df = Degrees of Freedom; RMSEA: Root Mean Square Error of Approximation, TLI: Tucker-Lewis Index; RMSR: Root Mean Square Residual; BIC: Bayesian Information Criterion. The preferred model is reported in bold. * $p \leq 0.05$, ** $p \leq .01$, *** $p \leq 0.001$.

of 0.20 to 0.40, with no correlation exceeding 0.51. However, there is a moderate correlation (0.50) between Victim and Conflict. Similarly, Victim and Attachment Phobia also exhibit a moderate correlation (0.50), aligning with theoretical expectations (being victimized often leads to desperately avoiding intimacy).

The best items were selected according to factor loadings and theoretical considerations. We retained 4 items for each subscale, except the dissociation subscale, which retained 8 items.⁹ Each subscale and the total score of the AATQ were then computed (see the Supplementary Material for the scoring algorithm).

Reliability and validity analyses were eventually performed for each subscale and for the overall questionnaire. The Sadistic Perpetrator and Compulsive Savior subscales showed weak psychometric properties, as indicated by: low reliabilities, low item-total correlations, low correlations with outcomes measures, a distributional floor effect for the Sadistic Perpetrator, and the fact that the associated factors have the lowest variances (Table 3, Tables S3, S4, S5, Figure S5). We decided to drop these two subscales and proceed with the remaining six subscales.

A further EFA was run on the final 28 items to support this choice. The PA EFA supported a six-factor solution (Figure S5). Through an Oblimin rotation, the items loaded as expected to the respective factor,

with no crossloading > .32 (Table S6). Variance was spread quite evenly across the six different factors ($\approx 10\%$), with the only difference being the first factor (Attachment-related Dissociation), which accounted for more variance (16.3 %) because of the higher number of items (Table S7). Globally, the six factors explained 63.2 % of the total variance (Table S7). The interfactor correlations were slightly higher than those in the 8-factor solution, generally ranging from 0.30 to 0.45. Notably higher correlations included 0.46 between Attachment-Related Dissociation and Conflict, 0.54 between Conflict and both Dangerous Self and Victim, 0.51 between Attachment Phobia and Dangerous Self, and 0.49 between Attachment Phobia and Victim (Table S8).

The final version of the 28 items of the questionnaire is reported in Appendix A, along with a preliminary English Translation. Instructions and scoring are reported in the Supplementary Material. The reliability of the six final subscales, the total and item-total correlation for each subscale are reported in Table S9.

Convergent validity

Convergent validity analyses indicated satisfactory performance across all subscales, which were conceptually validated. Specifically, the Dangerous Self subscale emerged as one of the most predictive and strongly correlated with the reference outcomes, underscoring the significance of individuals' perceptions of their needs (see Discussion). For detailed correlation values and outcome-specific considerations, please refer to the Supplementary Material (from Table S10 to Table S17).

⁹ Dissociation is notably a broad and heterogeneous concept with many facets, the most important two being “compartmentalization” (also named “structural dissociation”) and “detachment” (also named “alterations in consciousness”) (Holmes et al., 2005; Steele et al., 2022). We retained 8 items in the dissociation factor instead of 4 because we wanted to cover both phenomena.

Table 3

Pattern Matrix with factor loadings >0.32, communalities, uniquenesses, and complexities of the preliminary version of the AATQ.

Item	F1	F2	F3	F4	F5	F6	F7	F8	Communality	Uniqueness	Complexity
Victim 2	.70								.606	.394	1.118
Victim 1	.658								.597	.403	1.205
Victim 12	.623								.688	.312	1.317
Victim 3	.616								.581	.419	1.444
Victim 8	.576								.729	.271	1.433
Victim 14	.555								.643	.357	1.482
Victim 10	.535								.501	.499	1.353
Victim 15	.5								.460	.540	1.583
Victim 7	.447								.693	.307	2.420
Dan self 3	.422								.580	.420	2.396
Victim 18	.401								.521	.479	2.398
Victim 6	.347								.643	.357	3.189
Conflict 5		.807							.798	.202	1.040
Conflict 7		.708							.725	.275	1.113
Conflict 4		.666							.657	.343	1.222
Conflict 3		.646							.621	.379	1.306
Conflict 6		.597							.517	.483	1.184
Victim 5		.547							.509	.491	1.465
Conflict 9		.483						.357	.560	.440	2.233
Victim 4		.461							.580	.420	2.230
Conflict 1		.451							.440	.560	2.369
Conflict 2		.421							.462	.538	2.726
Victim 13		.385							.561	.439	3.658
Conflict 8									.423	.577	4.067
Diss 1			.817						.699	.301	1.074
Diss 5			.792						.659	.341	1.093
Diss 2			.739						.646	.354	1.092
Diss 3			.726						.621	.379	1.188
Diss 8			.691						.552	.448	1.264
Diss 7			.686						.564	.436	1.082
Diss 9			.634						.488	.512	1.345
Diss 4			.629						.563	.437	1.265
Diss 6			.505						.420	.580	1.376
Diss 11									.448	.552	3.941
Diss 10									.266	.734	3.873
Victim 16		.321		.56					.666	.334	1.825
Dan self 2				.498					.715	.285	2.242
Dan self 5				.497					.614	.386	2.011
Dan self 4				.495					.737	.263	2.074
Att pho 4				.485					.397	.603	1.485
Sad per 1				.479					.484	.516	2.122
Dan self 1				.461					.731	.269	2.319
Victim 17				.457					.713	.287	2.810
Savior 2				.452			.338		.530	.470	2.587
Sad per 3				.403					.482	.518	3.331
Dan self 6				.386					.416	.584	1.991
Savior 3				.384			.333		.537	.463	3.251
Att pho 5					.807				.688	.312	1.044
Att pho 3					.648				.676	.324	1.210
Att pho 6					.635				.538	.462	1.258
Att pho 2					.574				.657	.343	1.712
Att pho 1					.453				.624	.376	2.110
Rev per 3						.754			.599	.401	1.044
Rev per 4						.747			.647	.353	1.047
Rev per 2						.741			.565	.435	1.063
Rev per 5						.691			.537	.463	1.141
Rev per 1						.605			.449	.551	1.198
Savior 7							.754		.563	.437	1.097
Savior 6							.677		.485	.515	1.058
Savior 8							.674		.479	.521	1.106
Savior 5							.469		.259	.741	1.654
Savior 1							.432		.584	.416	3.349
Victim 11							.355		.287	.713	1.668
Savior 4									.254	.746	3.513
Sad per 4								.515	.455	.545	1.876
Sad per 5								.51	.379	.621	1.371
Sad per 6						.345		.457	.435	.565	2.416
Victim 9								.382	.390	.610	2.267
Sad per 2				.321				.361	.447	.553	3.553
Att pho 7									.331	.669	3.864

Note. Att pho = Attachment Phobia, Conflict = Conflict, Dan self= Dangerous Self, Diss = Attachment-Related Dissociation, Rev per = Revengeful Perpetrator, Sad per = Sadistic Perpetrator, Savior = Compulsive Savior, Victim = Victim.

Table 4

Eigenvalues and Variance Explained for the Eight-Factor rotated (Oblimin) solution.

	F1	F2	F3	F4	F5	F6	F7	F8
SS loadings	6.786	6.500	6.263	5.132	4.401	3.811	3.160	2.319
Proportion Variance	.097	.093	.089	.073	.063	.054	.045	.033
Cumulative Variance	.097	.190	.279	.353	.415	.470	.515	.548
Proportion Explained	.177	.169	.163	.134	.115	.099	.082	.060
Cumulative Proportion	.177	.346	.509	.643	.758	.857	.940	1.000

Incremental validity

See Table S19 for the results. The AATQ demonstrated excellent incremental validity, outperforming the ADA and providing additional information with respect to the ECR. Looking at the zero-order Pearson Correlation table (Table S18), the AATQ consistently exhibited the highest correlations/predictiveness with the reference outcomes compared to its competitors. Results from regression analyses showed that AATQ made the effect of ADA non-significant in predicting ITQ DSO, ITQ PTSD, DERS, and MOPS. In comparison with the ECR, the AATQ consistently added incremental validity across all studied measures; in the case of ITQ DSO, ITQ PTSD, PTCI, and MOPS, AATQ had also the highest beta standardized coefficient in the extended model; the addition of the AATQ also made the avoidance subscale not significant in the case of ITQ PTSD and MOPS. Finally, even in models where both ECR subscales and ADA are included in the reduced model, the addition of the AATQ in the extended model consistently resulted in a significant increase of R^2 , albeit modest.

Subscales' and total score through demographics

Finally, we analyzed the scores of the selected subscales and the total score across basic demographic variables (Table 5).

Gender differences were not significant, except for the Attachment Phobia subscale, with males significantly higher in that regard. Age had a negative small but significant effect only on the Conflict and Dangerous Self subscales. Education showed consistently small but significant effects, with higher education levels linked to lower AT. Relational status had a major impact, with those in a stable relationship consistently reporting lower levels of AT. Additionally, having a psychological diagnosis and the use of psychiatric drugs were associated with higher levels of AT across most subscales, except for Attachment Phobia and Revengeful Perpetrator.

Discussion

The present study described the development and validation of the *Adult Attachment Trauma Questionnaire* (AATQ), a new questionnaire investigating AT in adult romantic relationships. The measure stemmed from a thorough theoretical reflection on the concept of AT, drawing from the approach-avoidance literature and Giovanni Liotti's clinical theory on the *drama triangle*. AATQ aims to be the first measure for AT in adults.

After many refinements, the AATQ went through an EFA using a general sample of 407 adults. The AATQ demonstrated a six-domain solution, after discarding two subscales (Sadistic Perpetrator and Compulsive Savior) because of weak convergent validity properties.

The AATQ consists of 28 items across six domains (see Appendix A). The Victim subscale maps beliefs that attachment intimacy is associated with danger, specifically threat (items 3 and 4) and neglect (items 1 and 2). The Conflict subscale focuses on approach-avoidance conflict behaviors, specifically diachronic conflict (item 6), synchronic conflict (item 7), repulsion once intimacy is established (item 5), and a wish for intimacy accompanied by fear (item 8). The Attachment-related Dissociation subscale measures reactions to rejection in attachment relationships, specifically metacognitive disruption (items 9 and 10), emotional hyperactivation (item 11) and hypoactivation (item 12), impulse dyscontrol (item 13), derealization (item 14), and depersonalization (items 15 and 16). The Dangerous Self subscale assesses beliefs that the "true" self is hideous (item 17) and that one's needs, if expressed fully and freely, would be a burden (item 18), scary (item 19), or hurtful (item 20) for the partner. The Attachment Phobia subscale assesses a strong denial of attachment needs or vulnerability toward the partner (items 21, 22, 23, and 24). The Revengeful Perpetrator subscale measures intense revenge behaviors upon discovering that the partner has failed to meet expected caregiving attitudes (item 25), trust (items 26 and 27), or has committed an offense that is then retaliated against with an even more hurtful offense (item 28). The six-factor solution has been

Table 5

AATQ subscales and total across different demographics.

Subscales	M (SD)	Range	Spearman Rho with Age (Years)	Spearman Rho with education	Males M (SD) Vs Females M (SD)	Singles M (SD) Vs Stable relationship M (SD)	Psychological diagnosis M (SD) Vs No psychological diagnosis M (SD)	Use of psychiatric drug M (SD) Vs No use of psychiatric drug M (SD)
Victim	8 (4.55)	4 - 28	−0.01	−0.09*	7.88 (4.47) Vs 8.11 (4.64)	10.4 (4.99) Vs 6.31 (3.30)***	8.98 (4.65) Vs 7.8 (4.48)*	9.23 (5.17) Vs 7.77 (4.40)*
Conflict	9.27 (5.49)	4 - 28	−0.15**	−0.16**	9.01 (5.11) Vs 9.53 (5.82)	12.5 (5.55) Vs 6.98 (4.13)***	11.2 (6.00) Vs 8.89 (5.28)**	10.3 (5.60) Vs 9.05 (5.44)*
Attachment-related Dissociation	9.37 (4.92)	4 - 26.5	−0.08	−0.13**	9.38 (4.80) Vs 9.35 (5.05)	10.8 (5.14) Vs 8.32 (4.48)***	11.1 (5.55) Vs 9.02 (4.70)**	11.2 (5.59) Vs 9.00 (4.71)**
Dangerous Self	10.83 (6.16)	4 - 28	−0.11*	−0.15**	10.2 (5.31) Vs 11.4 (6.83)	13.5 (6.27) Vs 8.96 (5.36)***	13.0 (6.44) Vs 10.3 (5.96)**	12.7 (6.18) Vs 10.4 (6.10)**
Attachment Phobia	12.51 (5.75)	4 - 28	−0.02	−0.24***	13.2 (5.37) Vs 11.9 (6.04)**	14.6 (5.62) Vs 11.1 (5.40)***	12.7 (4.79) Vs 12.4 (5.89)	12.6 (5.56) Vs 12.5 (5.80)
Revengeful Perpetrator	8.47 (4.75)	4 - 28	0.02	−0.17***	8.10 (4.40) Vs 8.82 (5.04)	9.18 (4.85) Vs 7.97 (4.63)**	8.38 (4.18) Vs 8.34 (4.71)	8.32 (4.33) Vs 8.50 (4.84)
Total	58.45 (24.28)	24 - 144.5	−0.09	−0.21***	57.7 (22.2) Vs 59.1 (26.2)	70.9 (24.0) Vs 49.6 (20.3)***	65.3 (23.4) Vs 56.8 (23.8)**	64.4 (24.9) Vs 57.3 (24.0)*

* $p < .05$.** $p < .01$.*** $p < .001$.

confirmed in a further EFA on the 28 final items (see the Results section) and through a CFA in a further general sample of 345 adults (Zagaria, Perinelli, & Lombardi, 2025, in preparation).

The main strength of the AATQ lies in its ability to provide a multifaceted assessment of relational disturbances in adult romantic relationships. It showed strong incremental validity, outperforming the ADA. The ADA, focusing solely on fear of intimacy, does not address the full range of dynamics that emerge from a traumatized attachment system. AT involves more than just fear of intimacy; it includes *controlling strategies*, as well as dissociative components, conflict behaviors, and distorted self-concept. Moreover, the AATQ provided an additional layer of information beyond traditional measures like the ECR, which measures adult attachment dynamics but does not directly address frankly pathological or traumatic phenomena.

In particular, from the convergent validity analysis (Table S10 to Table S17), it is evident that the Dangerous Self subscale is the most predictive of pathological outcomes, sometimes more pronouncedly than the AATQ total score. Such phenomenon leads us to ponder on the perceptions of one's attachment needs as destructive as a particularly diagnostic marker of AT. It is established in both attachment (e.g., Atwood, 1995) and trauma literature (e.g., Hyland et al., 2023) that complex trauma to the attachment system leads to systematic distortions of the sense of self. However, less attention has been paid to how these disturbances might connect a need for reassurance with a destructive perception of that very need. The connection has only been marginally addressed in some studies (e.g., Main and Hesse, 1992/2021). The Dangerous Self domain represents a nearly entirely novel contribution of this study and it has proven to be the most predictive AATQ facet.

Another worth-mentioning issue was the necessity to drop the Compulsive Savior domain. Although the "compulsive caregiver"/"role reversing" seems to be an important dimension in the psychology of DA development (Main & Cassidy, 1988; Wartner et al., 1994; van IJzendoorn et al., 1999) and an important phenomenon observed in the clinical practice with adults (e.g., West & Keller, 1991), it did not find substantiation in our analysis. The Compulsive Savior domain showed very low correlations, mostly non-significant, throughout the outcomes (see Table S5). This could be due to our sample or to poor item construction. It might also be that the AT is not as powerful in determining caregiving attitudes as much as the traditional attachment dimension of anxiety and avoidance (Gillath et al., 2005).

Furthermore, the Sadistic Perpetrator subscale was not tenable in the final version of the AATQ, because of its floor effect (Figure S5) and suboptimal psychometric properties (Tables S4, S5). Social desirability has likely been at play due to the inherent unpleasantness of the items (e.g., "If my partner appears defenseless, I feel like wanting to humiliate them"). It may also be that the items were not as clear as we envisioned them to be. Finally, our clinical speculation about the subdivision of "revenge-driven" and "sadistic-driven" aggression in attachment relationships (see the section "Developing the AATQ items") may be not robust. Future work may clarify this, investigating clinical samples in which sadistic behaviors might be more present.

Regarding the behavior of the single facets across demographic variables (Table 5), we find that the AATQ subscales (and the total) do not vary significantly by sex, except for the Attachment Phobia subscale. This is consistent with existing literature, which shows that males often report higher levels of attachment avoidance dynamics than females (Del Giudice, 2011). Education level consistently affects AT, with higher education linked to lower levels of trauma, aligning with previous studies (Vilaplana-Pérez et al., 2020). As expected, individuals with a psychiatric diagnosis or those who have ever used psychiatric drugs show consistently higher levels of AT. Disturbance in adult attachment is indeed robustly associated with worse mental health (Zhang et al., 2022).

However, the most notable difference lies in relational status, with single individuals reporting significantly higher AT compared to those in stable relationships. This could be due to two interacting factors: AT may

hinder one's ability to maintain a stable relationship, or current relational status may affect how one recalls self-schemas in relationships. However, our result aligns with evidence showing that being in a stable relationship is associated with better mental health overall (e.g., Grundström et al., 2021).

Limitations and future research

The present contribution does not come without limitations. First and most importantly, the analyses were conducted on a general population sample. Given the relation between AT and pathological phenomena, the AATQ should soon be investigated in a clinical sample. Our study suggests that the clinical population may have higher levels of AT. It is essential to clarify whether the questionnaire maintains its structure in a "pure" clinical population and whether issues like compulsive caregiving and sadistic devaluation are also absent in such a population. We are committed to exploring these unresolved questions in future research.

It has also been noted that Prolific samples are slightly biased in favor of younger and more educated people in comparison to "representative" samples (Prolific, n.d.). We mitigated this effect by setting age boundaries and obtaining thus a sample composed mainly of workers. However, an undeniable limitation of the sample is its high level of education, so future studies should aim to include a more diverse range of educational backgrounds. Secondly, data were cross-sectional; hence, future studies should analyze this scale longitudinally, in order to obtain test-retest stability and measurement invariance over time. Thirdly, all data were self-reported; hence, informant-reported data might be useful to enhance AATQ's external validity.

Another relevant concern to be addressed is a more in-depth analysis of the convergent and discriminant validity of the different AATQ subscales. The correlations with the ADA, ECR, and the Disturbances in Relationships subscale of the ITQ were satisfactory, but the associations with the IIP-32, which measures interpersonal difficulties beyond intimacy, were less strong. Therefore, future studies should focus more on exploring the broader relational functioning of individuals with presumed AT. Future developments of the measure might also entail a proper translation and validation into English.

Conclusion

Even though AT is a known clinical heuristic, attachment and trauma literature rarely communicate with each other in scientific Psychology (Zagaria et al., 2024). We tried to fill this gap by providing a simple and valid instrument, the AATQ, for a reliable and valid measurement of the different facets of adult AT. The AATQ has been validated on a general sample, demonstrating its ability to discern attachment-traumatic dynamics in a trait-like fashion. Given the scarcity of such measures in the literature, our questionnaire may be especially useful for researchers and practitioners. The presence of a total score and six subscales score enhances also the interpretability of different nuances of dysfunctional patterns in romantic couples and potentially enhances personality assessment.

Ethics approval

The study has been approved by the Ethical Committee for Research of the University of Trento (Protocollo 2022-043).

Consent for publication

All the authors mentioned in the manuscript have agreed to authorship, read and approved the manuscript, and given consent for submission and subsequent publication of the manuscript.

CRedit authorship contribution statement

Andrea Zagaria: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Enrico Perinelli:** Writing – review & editing, Visualization, Validation, Software, Methodology, Formal analysis. **Luigi Lombardi:** Writing – review & editing, Validation, Supervision, Software, Resources, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation.

Declaration of competing interest

All the authors declare that they have no conflict of interest.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.ejtd.2025.100533](https://doi.org/10.1016/j.ejtd.2025.100533).

Appendix A. Final Adult Attachment Trauma Questionnaire (AATQ) items

For the instructions and scoring, please see the Supplementary Material.

Victim

1. Se chiedo aiuto, il mio partner mi ignorerà
If I ask for help, my partner will ignore me
2. Il mio partner non si interessa dei miei problemi
My partner does not care about my problems
3. Se mi mostro fragile, il mio partner mi ferirà
If I show myself as vulnerable, my partner will hurt me
4. Se mi avvicino emotivamente, sarò umiliato/a dal mio partner
If I get close to my partner, they will humiliate me

Conflict

5. Quando mi accorgo di essere coinvolto/a con il mio partner, provo fastidio verso di lui/lei
When I realize I am emotionally attached to my partner, I feel annoyed with them
6. Sento l'esigenza di avvicinarmi al mio partner e subito dopo sento il bisogno di allontanarmene
I feel the need to get closer to my partner, then immediately after I feel the need to get away from them
7. Nello stesso momento, sento l'esigenza di avvicinarmi al mio partner ma anche di allontanarmene
I feel the need to get closer to my partner, but also to get away from them at the same time

8. Vorrei delle relazioni di coppia, ma essere vicino a qualcuno mi spaventa^a
I want intimate relationships, but being emotionally close to somebody frightens me

Attachment-related dissociation

9. Quando il mio partner mi rifiuta, perdo la mia capacità di pensare chiaramente^b
When my partner rejects me, I lose my ability to think clearly
10. Quando il mio partner mi rifiuta, non riesco più a ragionare
When my partner rejects me, I can no longer reason
11. Quando il mio partner mi rifiuta, le mie emozioni sono incontrollabili
When my partner rejects me, my emotions go out of control
12. Quando il mio partner mi rifiuta, mi sento "ovattato/a" o come senza emozioni
When my partner rejects me, I feel "numb" or emotionless
13. Quando il mio partner mi rifiuta, perdo il controllo sulle mie azioni
When my partner rejects me, I lose control over my actions
14. Quando il mio partner mi rifiuta, l'ambiente attorno a me sembra lontano o irrealistico^c
When my partner rejects me, the environment around me seems distant or unreal
15. Quando il mio partner mi rifiuta, parti del mio corpo non sembrano fare parte di me
When my partner rejects me, parts of my body feel as if they did not belong to me
16. Quando il mio partner mi rifiuta, non riconosco il mio corpo, come se appartenesse ad un'altra persona
When my partner rejects me, I do not recognize my body, as if it belonged to another person

Dangerous Self

17. Appena il mio partner mi conoscerà del tutto, si accorgerà che dentro di me c'è qualcosa di orribile
As soon as my partner gets to know me fully, they will realize that there is something awful inside me
18. Se mostro tutti i miei bisogni, sarò un peso per il mio partner
If I express all my needs, I will become a burden to my partner
19. Se mostro tutti i miei bisogni, spaventerò il mio partner
If I express all my needs, I will scare my partner
20. Se mostro tutti i miei bisogni, farò del male al mio partner
If I express all my needs, I will hurt my partner

Attachment Phobia

21. Nascondo le mie debolezze al mio partner
I hide my weaknesses from my partner
22. Evito di mostrarmi indifeso/a davanti al mio partner
I strive not to appear helpless in front of my partner
23. Faccio di tutto perché il mio partner non mi veda mai debole
I do everything I can so that my partner will never see me as weak
24. Faccio di tutto per non chiedere mai aiuto al mio partner
I do everything I can to never ask my partner for help

Revengeful Perpetrator

25. Se il mio partner non si prende cura di me come dovrebbe, mi vendicherò
If my partner does not take care of me as they should, I will retaliate
26. Se il mio partner tradisce la mia fiducia, gliela farò pagare
If my partner betrays my trust, I will make them pay for it

27. Se il mio partner tradisce la mia fiducia, lo/a distruggerò
If my partner betrays my trust, I will destroy them
28. Se il mio partner mi fa del male, io gliene farò ancora di più
If my partner hurts me, I will hurt them even more

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^a inspired by the revised Psychosis Attachment Measure (rPAM; Pollard et al., 2020)

^b inspired by the Berkeley-Leiden adult attachment questionnaire-Unresolved (BLAAQ-U, Main et al., 1993)

^c inspired by the Cambridge Depersonalisation Scale (CDS; Sierra & Biersos, 2000)

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