| CORRECTION

Correction to "Visualizing the Invisible Tie: Linking Parent–Child Neural Synchrony to Parents' and Children's Attachment Representations"

There is an error in the data pertaining to the measure of children's attachment representations derived from the Picture Story Stem Battery (PSSB) because PSSB coherence values from 23 children were wrongly assigned to children's IDs. In the new analyses based on the corrected PSSB coherence values, the authors could not replicate the originally reported finding that dyads comprising daughters with secure attachment representations showed higher INS in right temporo-parietal regions—that is, the corrected results no longer revealed significant (interaction) effect, $p > 0.091$. All other results remained unchanged—that is, the authors confirmed their originally reported findings of no significant associations between children's PSSB coherence, behavioral synchrony, and children's biological sex, $p > 0.305$. The updated findings require corrections for Section 5.3 in the discussion. Additionally, all affected descriptive statistics and results in the Supplemental Materials have been corrected. Here are the corrections:

The third point in the Research Highlights is:

Dyads including daughters with secure attachment representations showed higher INS in right temporo-parietal regions.

It should have been:

Attachment representations in children were not associated with INS of parent-child dyads

The fourth point in the Research Highlights is:

INS is a **promising** correlate to probe the neurobiological underpinnings of attachment representations in the context of parent-child interactions, especially within the mutual prediction framework.

It should have been:

INS is a **potential** correlate to probe the neurobiological underpinnings of attachment representations in the context of parent-child interactions, especially within the mutual prediction framework.

In the Abstract, the following sentences:

- Remarkably, individual differences in attachment representations were associated with INS but not behavioral synchrony ($p > 0.159$) during cooperation.
- Conversely, secure daughter attachment representations were related to higher daughter–parent INS within temporal regions ($X^2(3) = 12.58$, $p = 0.006$). Our data thus provide further indication for INS as a promising correlate to probe the neurobiological underpinnings of attachment representations in the context of early parent–child interactions.

Should have been:

- Remarkably, individual differences in **maternal** attachment representations were associated with INS but not behavioral synchrony ($p > 0.159$) during cooperation.
- Conversely, children's attachment representations were not significantly associated with parent-child INS ($p > 0.091$). Therefore, our findings partly suggest that INS may be a promising correlate to probe the neurobiological underpinnings of attachment representations in the context of early parent-child interactions.

In Section 4.5, the sentence:

The model outputs showed **a** significant interaction effect of ROI, children's biological sex, and PSSB coherence, $X^2(3) = 12.58, p = 0.006$.

Should have been:

The model outputs showed **no** significant fixed and interaction effects of ROI, children's biological sex, and PSSB coherence, $p > 0.091$.

In Section 4.6, the sentence:

However, none of these relations were significant, $p > 0.803$.

Should have been:

However, none of these relations were significant, $p > 0.305$.

Section 5.3 should have been:

1 | Discussion

1.1 | INS, Behavioral Synchrony, and Children's Attachment Representations

In contrast to parental attachment representations, we did not find a significant association between children's attachment representations and parent-child INS or behavioral synchrony. This null finding might be due to several reasons. First, the dissociation between our findings may suggest a stronger link between parent's attachment representations and INS because both constructs despite certain commonalities, differ in important ways. Specifically, parental attachment representations are postulated to shape parenting behaviors, and there is abundant evidence supporting this core assumption of attachment theory (van Ijzendoorn 1995; Belsky 2005). Along the same lines, the parental attachment and caregiving systems are thought to be complementary and thus likely to influence one another reciprocally (e.g., Canterberry and Gillath 2012; Colledani et al. 2022; Psouni 2019). Such a reciprocal influence may have especially come to light during the Tangram task resembling a typical parenting situation. Because parental attachment representations are defined as the way parents recall their caregiving history (especially when derived from the AAI), they may even be viewed as resulting from the parents' effort to come to terms with their own experiences (see Solomon and George 1996), and therefore possibly leading to increased INS in a compensatory effort in our sample as described above. On the contrary, children's attachment representations are still less stable and involve only a small body of experiences. Although they are thought to evolve within the parent-child relationship, there is only limited evidence linking them to children's behavior during parent-child interaction. This may particularly hold true for children's attachment representations derived from the PSSB, which primarily focusses on situations that ought to activate children's attachment system (e.g., fear, hurt, etc.). Such representations may thus not have been directly relevant in the Tangram Puzzling task, which was somewhat challenging but nonetheless playful. Finally, the observed dissociation between parental and children's attachment representations in relation to parent-child INS may suggest that although children's independence is increasing at preschool age, parents' and children's roles during parent-child interaction might still not yet be fully equal. More specifically, during a Tangram puzzle task, children might still (at least partially) rely on their parents' capacity to lead and co-regulate. Thus, the contribution of parental attachment representations is expected to be more substantial. Future studies including older children will be helpful to assess whether, and if so, when parent-child INS becomes more strongly associated with child attachment representations as the attachment relationship develops.

Finally, we did not find behavioral synchrony to be associated with children's biological sex and attachment representations derived from the PSSB. Interestingly, previous evidence suggests a link between attachment security and other attachment-relevant behaviors, that is, less unnecessary help-seeking, fewer inability attributions, and more metacognitive strategies during problem solving (Colman and Thompson 2002; Moss and Gosselin 1997). Indeed, secure attachment representations reflect an internalization of experiences that, by this developmental stage, enables children to anticipate parents' reassurance and—given this sense of security/predictability—act more self-reliant in tackling the task on their own. Future studies could further test additional attachment-related behaviors in association with INS to understand the complex interplay between attachment representations, INS, and interaction behavior.

We apologize for this error.

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