The study by **Prato-Previde, Basso Ricci, and Colombo (2022)** explores the human–animal bond through three core psychological mechanisms: **empathy, attachment, and anthropomorphism**. While their research primarily focuses on how these processes can become dysfunctional (as seen in animal hoarding), the **Neurodivergent Scale for Interacting with Robots (NSIR)** applies these same psychological pillars to a healthy, supportive interaction between neurodivergent individuals and robotic agents.

The NSIR functions as a bridge that translates the "human–animal" bond mechanisms described by Prato-Previde et al. into a "human–robot" context:

1. Anthropomorphism as a Core Connection

Prato-Previde et al. define anthropomorphism as the tendency to attribute human mental states and intentions to non-human beings. In their study, they note that animal hoarders often exhibit an exaggerated form of this, believing animals possess a degree of understanding that may exceed reality.

- **Scale Application:** The NSIR explicitly measures this through **Factor 2 (Anthropomorphic Connection/Kinship)**.
- **Items: Item 1** ("The robot is more like me than anyone else I know") and **Item 5** ("My robot can tell what I am feeling") represent a controlled and positive use of anthropomorphism to foster a sense of being understood—a key component of the human–animal bond identified by the authors.

2. Attachment and the "Safe Haven"

Prato-Previde et al. use attachment theory to explain why humans seek proximity to animals for comfort and security. They argue that animals often serve as a "safe haven" during times of distress.

- **Scale Application:** The NSIR's **Factor 1 (Social Comfort/Trust Safety)** captures this same "safe haven" effect.
- **Items: Item 7** ("I feel comfortable undressing in front of my robot") and **Item 8** ("I believe that my robot is the same with me as it is with anyone") emphasize the robot as a judgment-free zone. This aligns with Prato-Previde et al.'s finding that attachment is rooted in the perceived reliability and emotional safety provided by the non-human partner.

3. Empathy and Reciprocal Understanding

A major theme in the 2022 study is the role of empathy in modulating the quality of the bond. The authors note that a lack of empathy can lead to abuse, while a distorted empathy (feeling exactly what the animal feels) can lead to hoarding.

- **Scale Application:** The NSIR explores a "technological empathy" where the user feels a shared mental state with the robot.

- **Item: Item 3** ("I think I can share my thinking with the robot without speaking") reflects a form of empathetic resonance that mirrors the "non-verbal" bond humans often feel with pets.

Summary of Theoretical Overlap

Prato-Previde et al. (2022)	NSIR (2025) Application
Anthropomorphism: Attributing mental states to animals.	**Kinship**: Attributing a "like-me" status to a robot (Item 1).
Attachment: Seeking a "safe haven" and security.	**Trust Safety**: Feeling safe and unjudged in private (Item 7, 8).
Empathy: Sensing and responding to the other's feelings.	**Affective Sensing**: Believing the robot can detect sadness (Item 5).
Durability: A long-term, significant emotional bond.	**Forever Bond**: The intention to stay together "forever" (Item 4).

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In summary, the NSIR provides a quantitative way to measure the "healthy" version of the mechanisms that Prato-Previde et al. (2022) identified as the foundation of the human–animal bond. It suggests that for neurodivergent individuals, robots can fulfill the same **attachment and anthropomorphic needs** as animals, but with the added benefit of a completely consistent and predictable social partner.