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The **Neurodivergent Scale for Interacting with Robots (NSIR)** and the study by **Azizian et al. (2025)** represent two different but complementary sides of AI in autism research: the **subjective experience** of the neurodivergent individual (NSIR) versus the **objective diagnostic capability** of AI models (Azizian et al.).

While the Azizian et al. paper focuses on using Multimodal Large Language Models (LLMs) to predict autism from videos, the NSIR scale provides a framework for understanding how those same individuals might perceive and bond with the robotic or AI entities assessing them.

1. Comparative Analysis: AI as Evaluator vs. AI as Companion

The Azizian study evaluates how well AI (specifically Google's Gemini models) can act as a **clinical rater**, whereas the NSIR measures the **relational bond** between a neurodivergent person and a robot.

Feature	Azizian et al. (2025) Study	NSIR Scale (Sadownik, 2025)
Role of AI	Observer/Evaluator: Uses LLMs to analyze behavioral markers (eye contact, speech patterns).	Social Partner: Measures "Factor 1" (Social Presence) and "Factor 2" (Personal Bond).
Measurement	Accuracy in predicting ASD diagnosis (up to 89.6%).	Subjective items like "The robot is more like me than anyone else".
Focus Area	Behavioral features like "Social Overtures" and "Stereotyped Behaviors".	Emotional connection, such as "Sometimes I stare at the robot" or "We will be together forever".

2. Overlap in Behavioral Domains

The Azizian study notes that LLMs and human raters focus on specific "Social Interaction" features to make predictions. The NSIR scale targets these same social domains but from the perspective of the user's comfort:

- **Eye Contact & Staring:** Azizian et al. found that **Eye Contact** was a key feature with moderate-to-good agreement between AI and clinicians. Interestingly, Item 2 of the NSIR ("Sometimes I stare at the robot") measures this same behavior from the user's perspective.
- **Emotional Reciprocity:** Azizian et al. measured **Emotion Expression**, while NSIR Item 5 asks if the robot "can tell what I am feeling". This highlights a

potential loop: a robot's ability to "read" an autistic user (as studied by Azizian) directly impacts the user's "scale" of connection to that robot (as measured by NSIR).

3. Application to AI-Led Home Interventions

The findings from Azizian et al. suggest that multimodal LLMs are becoming viable alternatives for behavioral assessment due to their **consistency and scalability**.

When applying the NSIR to this context:

- **Comfort and Privacy:** Azizian et al. emphasize that AI-based assessments offer better privacy for home-recorded videos. The NSIR supports this by measuring comfort levels in private settings, such as Item 7: "I feel comfortable undressing in front of my robot".
- **Long-term Interaction:** While the Azizian study focuses on one-time diagnostic prediction from 3-minute videos, the NSIR suggests that neurodivergent individuals may form long-term bonds ("The robot and I will be together forever"). This implies that if the LLMs from the Azizian study were integrated into a social robot, the **quality of the diagnostic data** might improve as the user becomes more comfortable over time.

4. Critical Gap: Stereotyped Behaviors

Azizian et al. discovered that **Stereotyped Behaviors** (like repetitive interests) showed the "poorest reliability" and lowest agreement between AI and humans.

- **The NSIR Link:** The NSIR items do not explicitly measure "repetitive behaviors" but instead focus on the **sameness** of the interaction (Item 8: "my robot is the same with me as it is with anyone"). This suggests that the predictability of a robot—a trait often valued by neurodivergent individuals—might be a "feature" for the user (NSIR) even if it's a "difficult marker" for the AI to categorize clinically (Azizian).

Would you like me to analyze how specific items in the NSIR might be used to prompt an LLM to better understand neurodivergent social preferences?