Table 63 Updated Concept Mapping December 25th

Updated Concept Mapping			
	Anthropomorphic Connection / Kinship	**Social Comfort/Trust**	**Safety**
1.	**Mind attribution / Mental state attribution:** Attributing human-like mental capacities such as thinking, feeling, perceiving, and desiring to non-human entities. **Ratajczyk (2024):** Explores social perceptions of **dominance vs. submissiveness** across the human-robot spectrum, assessing how human traits are mapped onto machines	**Social acceptance / User acceptance:** The willingness of individuals to use and interact with robots in social contexts. **Maj et al. (2024):** Studies how children perceive and respond to **assertive behavior** in robots, focusing on the social dynamics of the interaction	**Perceived security:** The user's sense of safety and reduced vulnerability when interacting with an agent. **Winkle et al. (2023):** Proposes a **Feminist HRI framework** to disentangle power structures, ensuring interactions are ethical and do not propagate harmful social hierarchies.
2.	**Empathy:** The human tendency to feel with the robot and put themselves in the robot's "shoes," often triggered by anthropomorphic design. **Nomura et al. (2006) / Pochwatko et al. (2015):** The **Negative Attitude Toward Robots Scale (NARS)** measures the psychological resistance or friction people feel when robots mimic human characteristics too closely	**Perceived sociability:** The extent to which a robot is seen as social, friendly, or a potential companion. **Pochwatko et al. (2024):** Examines how societal **representations of robots** determine human trust and their ultimate willingness to cooperate in organizational tasks.	**Ethical implications / Moral value:** Considerations of ethical design and whether a robot is perceived as a moral agent deserving of care or rights. **Balle (2022):** Explores the **moral status** of robots and empathic responses, discussing the ethical safety of creating "moral" agents **Bandura et al. (1996) / Gini et al. (2014):** While originating in psychology, these works on **moral disengagement** are critical for understanding how

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			safety boundaries might be ignored in technological or social systems
3.	**Attachment theory:** Developing emotional bonds and connections with AI systems or social robots, similar to human-human attachments. **Bjornsdottir et al. (2024):** Investigates how **stereotypic facial features** drive perceptions of social class, a core component of human-to-non-human trait projection	**Interpersonal warmth:** A quality attributed to robots that makes them seem more human-like and thus more accepted by users. **Koch et al. (2025):** Investigates consumer responses to **dominance patterns**(assertive vs. submissive) in voice-based service encounters and how these affect user comfort and trust	**Risk-regulation model:** The framework used to understand how people manage perceived risks in social connections to feel secure and protected. **Ostrowski et al. (2022):** Addresses **ethics, equity, and justice**, examining how robotic systems can be designed to avoid systemic biases and ensure user safety
	Social presence: The feeling that an artificial agent is a social entity and that the interaction is a social one. **Dennler et al. (2025):** Focuses on how design modalities like **voice and clothing** directly establish a robot's perceived gender identity and social role.	**Social integration / Belonging:** The feeling of being part of a social connection that meets psychological and interpersonal needs.	**Vulnerability:** The inverse of safety; an intention to accept vulnerability is a core component of trust.
	Psychological kinship / Fictive kinship: The "familial" or kin-like treatment of unrelated others or	**Reliable functioning / Competence:** A robot's ability to perform tasks consistently and effectively, which builds	**Appropriate trust / Over reliance:** Ensuring a balanced level of trust in a system to avoid

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	non-human entities based on perceived similarity or affinity.	trust and confidence in its capabilities.	both disuse (too little trust) and misuse (too much trust, which can compromise safety) **Zhu et al. (2024):** Introduces **Robots for Social Justice (R4SJ)**, which focuses on equity and the protection of marginalized groups within the HRI space
	Humanization: A process related to but distinct from anthropomorphism, involving attributing human qualities or form to other entities.	**Willingness to cooperate:** The extent to which humans are inclined to work with a robot, a consequence of trust and positive interaction **Broadbent et al. (2009):** Looks at the **preferences** of retirement home staff and residents for healthcare robots, focusing on the acceptance and comfort level of vulnerable populations	