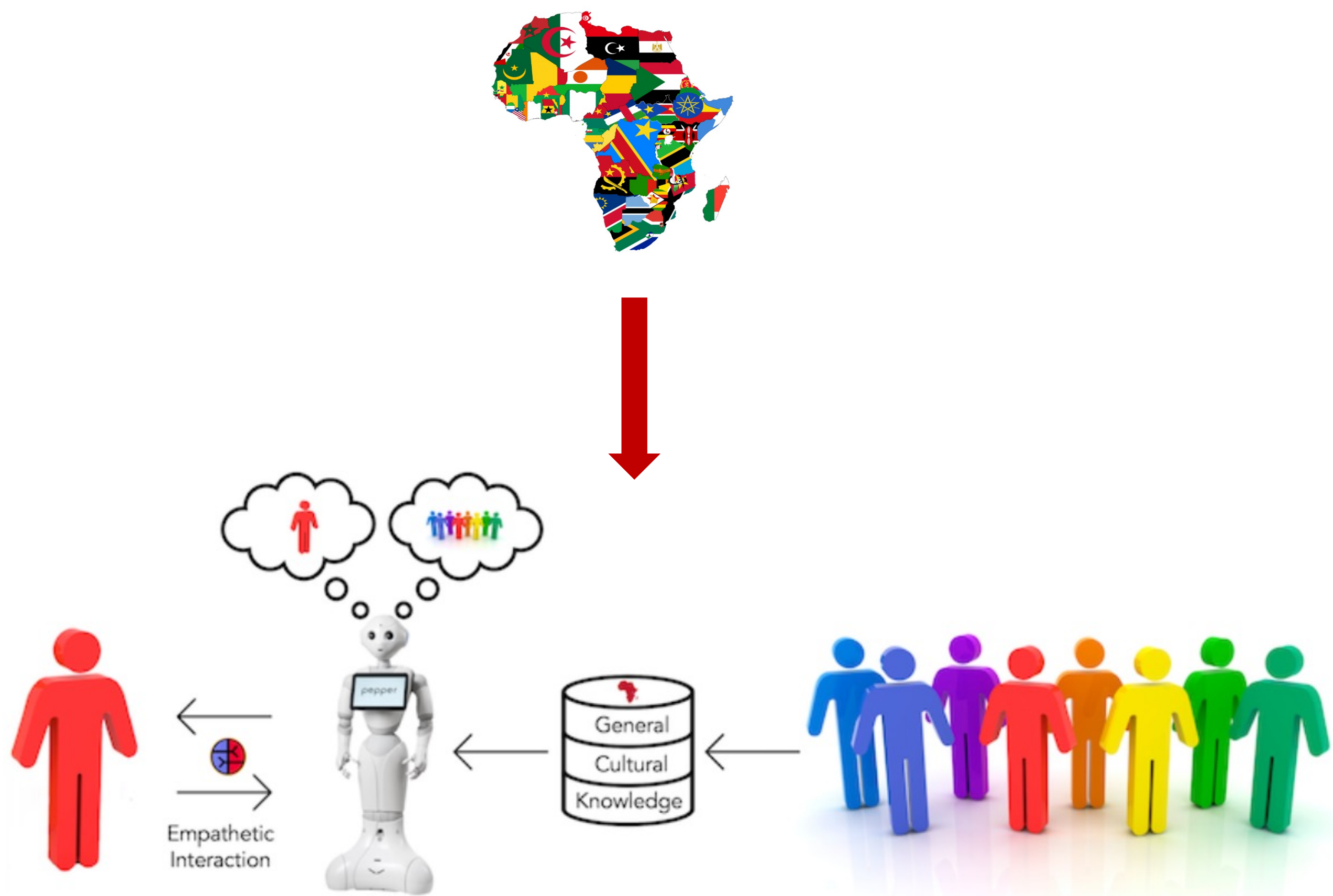


# Rwandan Culture Survey for Culturally-Sensitive Social Robotics for Africa

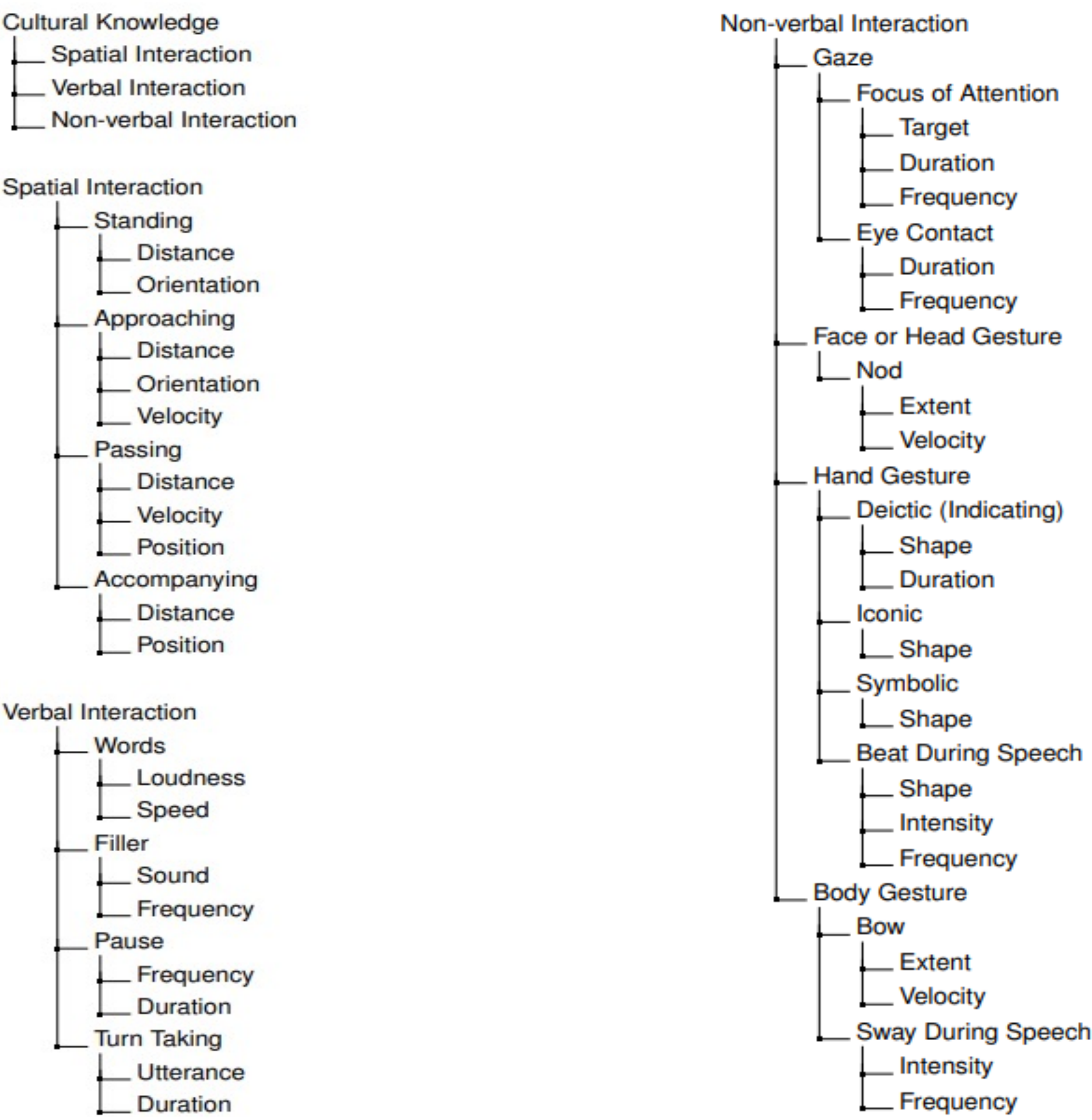
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## Research Goals

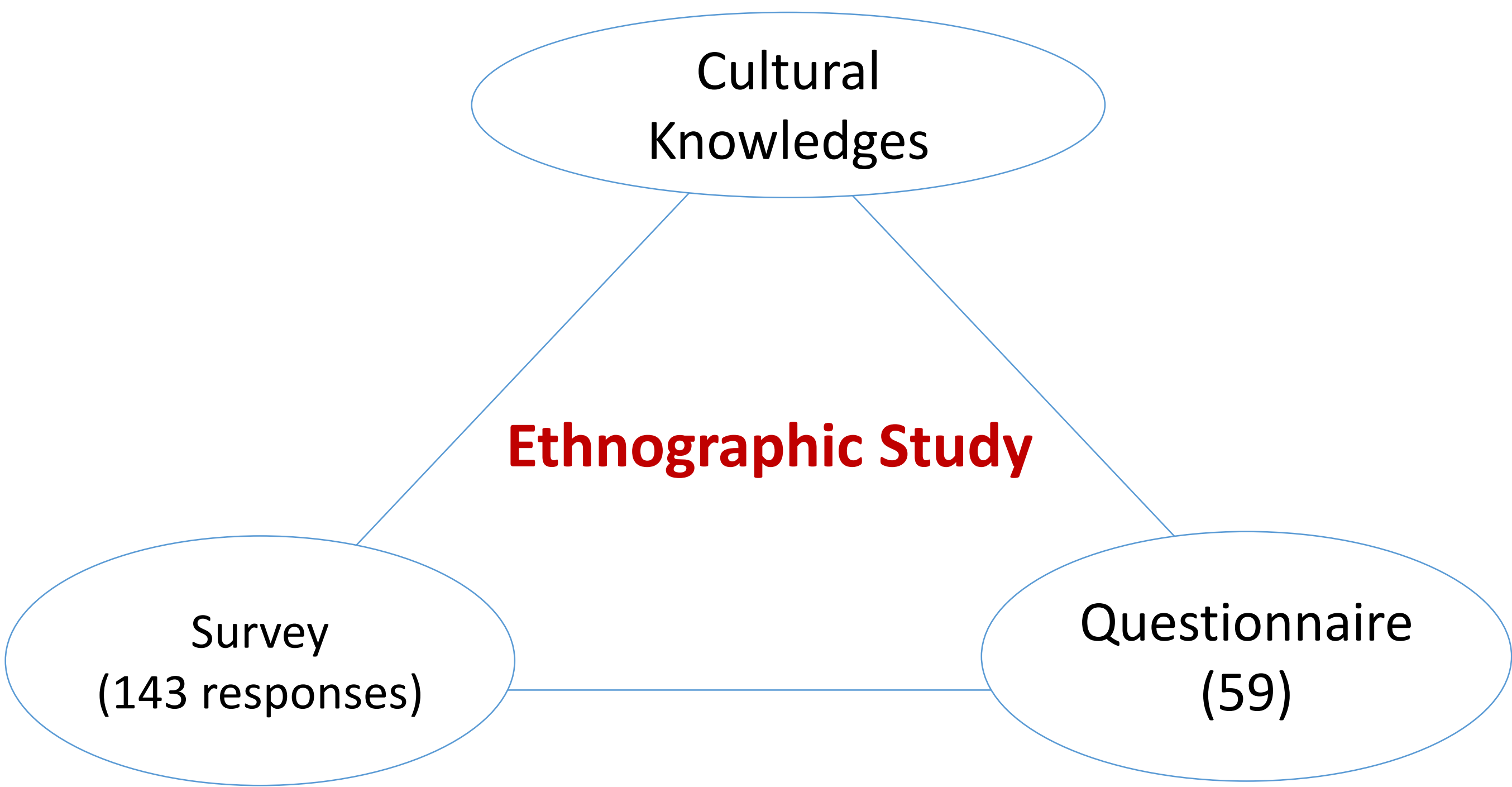
Identify the verbal and non-verbal social and cultural norms of human interaction that are prevalent in African countries, specifically **Rwanda**.



## Cultural knowledge Ontology



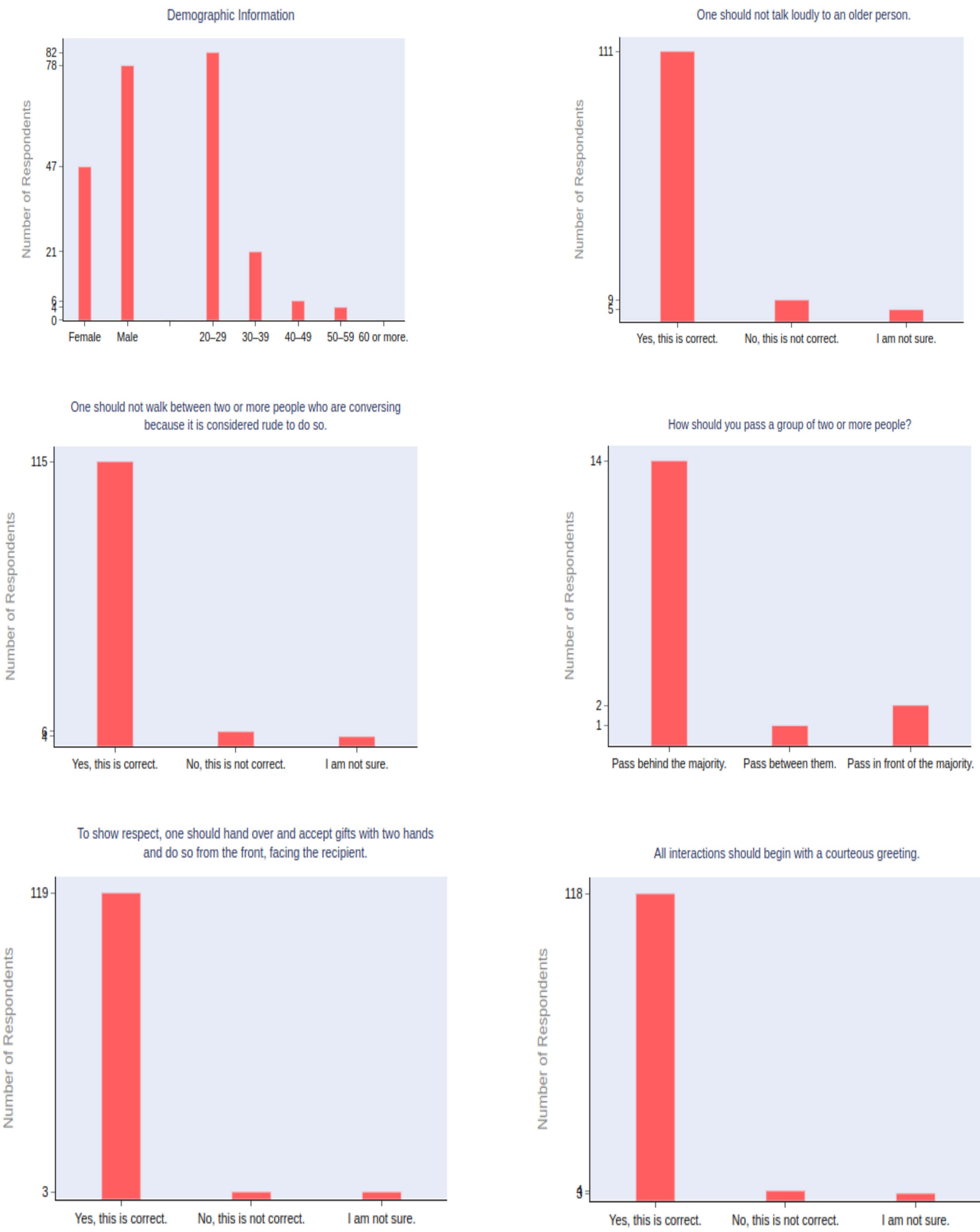
## Method



## Sample Questions

No.	Question
2-1	To show respect, one should lower gaze when greeting someone older.
2-3	One should keep intermittent eye contact; lack of eye contact depicts disrespect as it shows divided attention during the interaction.
2-4	One should not make persistent eye contact with an older person.
2-6	One should use an open palm of the hand to point to people and objects.
2-7	One should not point an upward-facing palm of the hand at someone.
2-8	One should not use the left hand to point to anything.
2-9	To show respect, one should bow slightly when greeting someone older.
2-12	One should not use the left hand to hand something to someone.
2-14	To show respect, one should shake hands with the right hand and use the left arm to support the right forearm when doing so.
2-15	An appreciation of rhythmic sound and movement is valued.
2-16	To show respect, one should bow slightly and lower gaze when greeting someone older.
2-17	The younger interaction partner should bow when greeting an older person or when rendering a service.
3-1	What distance should you keep when passing someone?
3-2	How should you acknowledge someone when passing them?
3-3	How should you pass a group of two or more people?
3-6	When showing someone younger than you the way, where should you position yourself?
3-7	How should you address someone who is older than you and who you haven't met before?
3-21	Would you use a face, head, hand, or body gesture to express gratitude?
3-22	Would you use a face, head, hand, or body gesture to express agreement?
3-23	Would you use a face, head, hand, or body gesture to express respect?
3-28	Is there a face, head, hand, or body gesture you should not use?
3-29	Would you use a hand or body gesture while speaking to someone?
3-30	Would you use a hand or body gesture while listening to someone?

## Results



## References

B. Bruno, C. T. Recchiuto, I. Papadopoulos, A. Saffiotti, C. Koulouglioti, R. Menicatti, F. Mastrogiovanni, R. Zaccaria, and A. Sgorbissa. Knowledge representation for culturally competent personal robots: requirements, design principles, implementation, and assessment. *International Journal of Social Robotics*, 11(3):515–538, 2019.

Weiss and V. Evers, “Exploring cultural factors in human-robot interaction: A matter of personality?” in *Comparative Informatics Workshop*. University of Amsterdam, 2011.

I. Papadopoulos, A. Saffiotti, F. Pecora, N. Y. Chong, Y. Lim, H. Kamide, J. Lee, C. Papadopoulos, and G. Randhawa, “Culturally competent human-robot interaction: Impact on user acceptance,” *International Journal of Social Robotics*, vol. 12, no. 4, pp. 1107–1120, 2020.

J. van Doorn, M. Mende, and A. L. Noble, “The role of human-robot interaction in consumers,” *Journal of Robotics and Automation*, vol. 17, no. 3, pp. 450–460, 2021.

T. Nomura, K. Kawakami, and K. Kanda, “Understanding cultural preferences for social robots,” *International Journal of Social Robotics*, vol. 15, no. 2, pp. 230–245, 2023.

J. Wirtz, P. G. Patterson, and W. H. Kunz, “Customers’ acceptance of artificially intelligent service robots,” *Journal of Service Research*, vol. 25, no. 1, pp. 50–65, 2023.

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