Y. Sasa, V. Auberge. ***Perceived isolation and elderly boundaries in EEE (EmOz Elderly Expressions) corpus: Appeal to communication dynamics with a socio-affectively gluing robot in a smart home.*** Gerontechnology 2016;15(suppl):162s; doi:10.4017/gt.2016.15.s.925.00 **Purpose** The elderly's perceived isolation has a considerable impact on their psychological wellbeing, but further on their physiological wellbeing. While these elderly do not have language problems, they are progressively weakened on communicational desires and consequently, abilities. This makes it difficult to build and to maintain relationships with their kinfolks, increasing their isolation and frailty. In this work, some non-lexical socio-relational sounds (pure prosody), which were collected, measured and perceptively studied from natural human interactions, are given to a robot. These sounds are considered as potential tools that enable the development and maintenance of a channel of communication with others in a process resulting in a 'socio-affective glue'. They are hypothesised to be relevant in building altruist attachment, avoiding any dominance cues. This human-robot interaction is set in a smart home proposed as a solution for elderly home support. **Method** A pretext task leads 24 elderly people to spend time in a 'gluing interaction' with a smart home butler robot, simulated in a wizard of Oz –EmOz– protocol. For each given command, the robot executes the automation and expresses gluing sounds as feedback, gradually ordered according to their relative building process effectiveness. The data are auto-annotated in a controlled protocol inspired from ethnomethodology, where the subjects themselves watch their interactions step-by-step, referring to their autobiographical memory. An aligned multimodal data labelling also describes the events that occur during the interactions. **Results & Discussion** In the subjects interactions, the data showed: (i) progressive paraphrasing and paralinguistic cues use, (ii) voice quality (increasing breathiness) and multimodalities dynamics changes, mainly for gazes and proxemics, but also on gestures, postures and positions. On the base of these collected data, an automatic socio-affective dialog system can be built with the specificity to change while the human-robot relation changes. Moreover, regular behavioural patterns regroup together some subjects with similar isolation degree. Indeed, in parallel, an investigation set to find isolation markers, based on the recruiting, the experiment introduction and the debriefing interviews, depicted similar groups. This technology is motivated to train some damaged skills of the isolated ones, in order to encourage them to use better communicational dynamics with humans to maintain their relationships.

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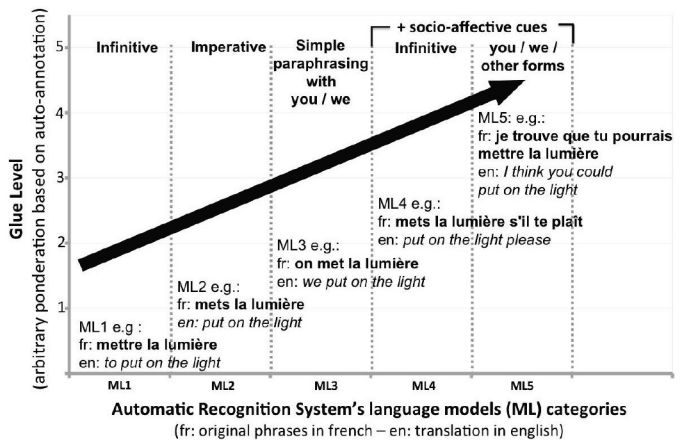
Figure 1. Socio-isolated elderly's paraphrasing patterns with changes according to the 'socio-affective glue' increase