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Increasing user acceptance by augmented robot intelligence: The lesson we got from the semantics of human communication

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Research on assistive robots has received special focus within the domain of robotics and is continuously gaining ground, also boosted by demographic data and related AAL supportive policies worldwide. Having in mind devices which need to address real user needs and be capable of interacting with users in some sort of "human" like manner, it has become mandatory to find robust ways for augmenting robot intelligence in order to enable devices overcome basic interaction shortages which are easily spotted during validation by end user populations. One predominant parameter for user acceptance is proven to be satisfaction of the human need for communication with an "intelligent" companion or assistant, if a device has to gain user trust and be systematically used within a specific mid- to long-term time frame. In this context, we exploit the paradigm of exposure of assistive devices in real use conditions, to discuss the degree of user acceptance and the need to augment robot intelligence in the context of multimodal HRI. Focus is placed on those NLP tools and resources which may increase the span of human-robot communication by engaging standard NLP approaches in combination with signals of human embodied expression which can lead to enhanced performance of robotic devices when they interact with humans.

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