1. Record Nr. UNINA9910136403003321 Autore Vogt Paul Titolo How mobile robots can self-organise a vocabulary [[electronic resource] /] / Paul Vogt Pubbl/distr/stampa Language Science Press, 2015 Berlin, Germany:,: Language Science Press,, 2015 ©2015 **ISBN** 3-946234-01-1 Descrizione fisica 1 online resource (xii, 270 pages): illustrations; digital, PDF file(s) Collana Computational Models of Language Evolution; ; volume 2 Disciplina 402.85 Symbol grounding Soggetti Language acquisition - Data processing Artificial intelligence Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Title from OAPEN webpage (viewed on 23 November 2017). Note generali Originally presented as the author's thesis (doctoral)--Vrije Universiteit Brussel, Belgium, 2000. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preface -- Acknowledgements -- 1. Introduction -- 2. The sensorimotor component --3. Language games --4. Experimental results --5. Varying methods and parameters --6. The optimal games --7. Discussion -- Appendix A: Glossary -- Appendix B: PDL code --Appendix C: Sensory data distribution -- Appendix D: Lexicon and ontology -- References -- Indexes. One of the hardest problems in science is the symbol grounding Sommario/riassunto problem, a question that has intrigued philosophers and linguists for more than a century. With the rise of artificial intelligence, the question has become very actual, especially within the field of robotics. The problem is that an agent, be it a robot or a human, perceives the world in analogue signals. Yet humans have the ability to categorise the world in symbols that they, for instance, may use for language. This book presents a series of experiments in which two robots try to solve the symbol grounding problem. The experiments are based on the

language game paradigm, and involve real mobile robots that are able to develop a grounded lexicon about the objects that they can detect in

their world. Crucially, neither the lexicon nor the ontology of the robots has been preprogrammed, so the experiments demonstrate how a population of embodied language users can develop their own vocabularies from scratch.