Virtual Neanderthals : a study in agent-based modelling Late Pleistocene hominins in western Europe

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Virtual Neanderthals

A study in agent-based modelling Late Pleistocene hominins in western Europe

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PREFACE

Wil Roebroeks has been kind enough to allocate part of his SPINOZA grant from the Netherlands Organisation for Scientific Research (NWO) to make this research possible. The research described in this thesis was carried out under the supervision of Prof. Dr. Wil Roebroeks, Dr. Kathy MacDonald, Dr. Alexander Verpoorte, and Dr. Hans Kamermans, from the Faculty of Archaeology of Leiden University, The Netherlands. I hereby certify that the research presented in this thesis is my own original work except where specific acknowledgments or references are made. All data and information including full source code necessary for confirming the conclusions presented in the thesis are represented fully within this thesis or in the Supplementary Materials on the accompanying data disk. The title of this thesis is shortened to 'Virtual Neanderthals'. Virtual as in "being on or simulated on a computer or computer network", as defined by the Merriam-Webster dictionary on-line: https://www.merriam-webster.com/dictionary/virtual, accessed 25 February 2018.

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Cover design

The front page is the illustration 'Cyborg with human skull in his hand', by Tatiana Shepeleva, used with permission and modified by me. The skull studied by the cyborg is a late *Homo neanderthalensis* skull and mandible from western Europe (La Ferrassie I), skull photo credited to Puwadol Jaturawutthichai. Photo composition designed using a blue sky picture as background (from ZaZa Studio, 'Blue sky with clouds and sun'). Reverse depicts an early hunter facing a mammoth: 'Mammoth and primitive man against a starry sky', illustration by Iurii. All images used for the cover retrieved from https://www.shutterstock.com, accessed 10 April 2019.

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This work is dedicated to my son, Thor Scherjon, whose innocence in modelling the world and creativity in deconstructing the true meanings of life keep surprising me.

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