

Mind Design and Minimal Syntax

WOLFRAM HINZEN

OXFORD
UNIVERSITY PRESS

OXFORD

UNIVERSITY PRESS

Great Clarendon Street, Oxford OX2 6DP

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide in

Oxford New York

Auckland Cape Town Dar es Salaam Hong Kong Karachi
Kuala Lumpur Madrid Melbourne Mexico City Nairobi
New Delhi Shanghai Taipei Toronto

With offices in

Argentina Austria Brazil Chile Czech Republic France Greece
Guatemala Hungary Italy Japan Poland Portugal Singapore
South Korea Switzerland Thailand Turkey Ukraine Vietnam

Oxford is a registered trade mark of Oxford University Press
in the UK and in certain other countries

Published in the United States
by Oxford University Press Inc., New York

© Wolfram Hinzen 2006

The moral rights of the author have been asserted
Database right Oxford University Press (maker)

First published 2006

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted, in any form or by any means,
without the prior permission in writing of Oxford University Press,
or as expressly permitted by law, or under terms agreed with the appropriate
reprographics rights organization. Enquiries concerning reproduction
outside the scope of the above should be sent to the Rights Department,
Oxford University Press, at the address above

You must not circulate this book in any other binding or cover
and you must impose the same condition on any acquirer

British Library Cataloguing in Publication Data
Data available

Library of Congress Cataloguing in Publication Data
Data available

Typeset by SPI Publisher Services, Pondicherry, India
Printed in Great Britain
on acid-free paper by

ISBN 0-19-928925-7 978-X-XX-XXXXXX-X
1 3 5 7 9 10 8 6 4 2

For my lovely children,
Konstantinos and Ariadne

Contents

Preface *vii*
Acknowledgements *xiii*

Part I: Naturally Human

1 Introduction. 3
 1.1 Humans as natural objects 3
 1.2 The study of human nature. 11
 1.3 Human design. 24
 1.4 The fate of human nature in the twentieth century. 32
 2 Against metaphysical naturalism 55
 2.1 From methodological to metaphysical naturalism. 55
 2.2 Rationalist method from Galileo to Chomsky. 66
 2.3 Double standards 79
 3 Biological internalism. 89
 3.1 Biology before unification 89
 3.2 Mind as function: A critique. 95
 3.3 God or natural selection or...?. 105
 3.4 Epilogue on explanation and necessity 110

Part II: Deducing Variation

4 Prior to function 117
 4.1 Language growth. 117
 4.2 Language and communication 128
 4.3 Language as a social construct. 139
 5 Beyond the autonomy of syntax. 150
 5.1 What is syntax? 150
 5.2 Explanation in linguistic theory 161
 5.3 Human phrase structure 170
 5.4 Transforming the phrase 194
 5.5 Why is there movement? 208
 5.6 The proper interpretation of LF/SEM 220

Part III: Rational Mind

6 Good Design!	239
6.1 Phases and cascades: Beyond LF	239
6.2 Epistemology for mental organs	250
<i>Conclusious</i>	272
<i>References</i>	278
<i>Index</i>000

Preface

Au: Change this as
Preface. Is this ok?

As we move from one line to the next in the following sequence of expressions, the fog gradually clears:

y;jdf[39r”#a-9875JKVxsclsjdl7@@
 sruo fo dlrow siht ni gninaem si ereht
 ours of world this in meaning is there
 there is meaning in this world of ours

Without quite knowing why, or what happens to us, words arrange themselves in a way that they seem meaningful to us. We cannot see or hear meanings (we haven't got sense organs for them), in the way we can see words or hear sounds. Even after many decades of 'naturalizing philosophy' unclarity prevails over what exactly a thought is that we express by a meaningful sentence, and how it arises from or relates to physical processes such as the electrical activity of the brain. We can describe many aspects of the transition from acoustical patterns to meaningful expressions, but only if we presuppose what is to be explained, the human faculty of language. Yet, whatever meanings are, nothing could be more evident than that some linguistic expressions carry determinate meanings, while others do not, and that we can have very specific and intricate intuitions on what these meanings are.

Whatever mind and meaning are, then, this book adopts a fundamentally 'realist' attitude towards them as phenomena of the natural world. There are linguistic expressions, some of which are meaningful; and we can describe their meanings, experiment with them and study them, while bracketing, for the moment, the ontological problem they pose. Meaning arises in organisms with an appropriate internal complexity and evolutionary history, which we can form hypotheses about; and it has empirically attestable properties that we can study naturalistically. This book seeks to describe the structural principles on which our human apprehension of meaning depends. More than any other introductions to linguistic theory it emphasizes philosophical assumptions on the nature of mind and meaning on which linguistic theory depends and that it has crucial implications for.

From the present perspective, studying the 'mental' is no different methodologically from studying the 'natural': this book centrally opposes a *methodological dualism*. Moreover, just as the study of our 'bodily' organization has a fundamentally *internalist* aspect—what organs mature in ontogeny is a function of genetic factors and laws of development—, it assumes that the study of our

‘mental organization’ should have this aspect too. In particular, it will claim, contrary to prevailing externalist orthodoxy, and to the extent that meaning patterns with linguistic form, that what meanings human linguistic expressions carry has little to do with how these expressions relate to the world. Neither need it relate to what beliefs we hold. On the contrary, how we relate to the world generally depends on our grasp of meaning, our possession of certain concepts and of structural principles that organize them.

In short, meaning is a structural and internalist phenomenon, relating to the emergence of order and of complex organization in the human language faculty, and other cognitive systems inside the mind interfacing with it. Linguistic form (syntax) moreover, I argue, does not merely act as a negative constraint on what expressions can mean, or which expressions are ‘well-formed’; it positively explains why certain expressions mean what they do, what human meaning is like, and why it is like that. I will describe this position on human syntax as essentially parallel to one found in theoretical biology, where a position that its nineteenth century defenders called ‘formalism’ or ‘rational morphology’ allows for the autonomous study of animal form, disregarding the external *conditions of existence* that drive such organic forms in or out of existence on the evolutionary scene.

Other than the functionalist, who will unfailingly ask the question ‘What is it for?’, the formalist will emphasize principles for the emergence of structural complexity inside the organism. Often, he will claim explanatory priority for the latter, diminishing the explanatory role that functions and adaptation play. The study of mind, in the present perspective, is the study of structural organization in no other sense than the biological formalist’s study of organic complexity, while addressing a level of reality more abstract than that usually addressed in the life sciences. It is formalism applied to the structure in nature that the mind is. As my bracketing of the ontological issue indicates, this naturalism will be a purely methodological stance in which no ontological questions of ‘materialism’ or ‘physicalism’ are prejudged. The closest predecessor for the notion of form used here may be W. v. Humboldt’s notion of the ‘Form of human language’, on which Chomsky (1966: 19, fn. 39) remarks that it amounts to much the same thing as the modern notion of the ‘generative grammar’ of a language. Interestingly, and in contradistinction to the notion of form used in formal logic, it included both syntactic and semantic structure.

Formalism and functionalism, S. J. Gould has suggested, ‘represent poles of a timeless dichotomy, each expressing a valid way of representing reality. Both poles can only be regarded as deeply right, and each needs the other because the full axis of the dichotomy operates as a lance thrown through, and then anchoring, the empirical world. If one pole ‘wins’ for contingent reasons of a transient historical moment, then the advantage can only be temporary and intellectually limited.’ (Gould 2002: 312)

This would give both formalism and functionalism equal rights to existence, as complementary rather than contradictory perspectives on the same explanandum. Though I am sympathetic to this view, this book makes the stronger claim that in some cases a formalist perspective may be more useful and allow a deeper explanatory depth. I further claim, following Chomsky, that human language is a good example. Gould's balanced dichotomy should alert us to the current predominance of functionalist and externalist thinking about the mind, even in research that falls outside the theory of mind that traditionally labels itself 'functionalist'. My primary overall aim in this book is to give formalism in the sense above a place in the current landscape of the philosophy of mind, and introduce the kind of study of the human language faculty—namely, generative grammar—that gives rise to my claims.

Apart from a methodological naturalism and internalism, this book wishes to articulate a *rationalist* position. In this tradition, the mind is credited with rational structures intrinsic to it as a natural object, structures it uses to interpret the world and its experience. This crucially empirical claim about the structure of mind is, from the present point of view, the essence of rationalism as a philosophical tradition, which continues to this day. Rationalism is then a claim about the intrinsic rational contents of the human mind—its *analytic* content—and a commitment on its factual internal *design*. As in the case of an animal's organ, or the universe at large, our mind's structural organization is a matter of empirical fact. We want to know what this design is like, what its nature and organizing principles are, hence what our nature is. Design can be good or elegant, and it can be bad, inefficient and convoluted, design that no rational designer would ever have contrived. Looking at our human mind, we would like to know which of these attributes describes it best.

Can we, in particular, give substance to the idea that the design of the language faculty is a form of 'elegant' or 'perfect' design? Its design might be deemed perfect if, say, it provided a maximally efficient solution to some task it is required to fulfil, but also if it was 'necessary', in the sense that it had all and only the elements it *needed* to have to be usable at all, hence was a form of 'minimal' design. Perfect design is not what we expect in evolution in general, where natural selection, in Jacob's phrase, is a form of 'tinkering' with given organismic designs: in general, evolution cannot engineer new designs from scratch to meet the demand of some new task. It has no foresight into a future in which certain designs will be needed. 'Blind' and mindless, it drags on and makes do with whatever organismic structure does a job *well enough*. Hence we expect nature to contain flawed and makeshift designs, one famous example of which may be human eye design, which a rational engineer, in Dawkins' words, would 'laugh at': photoreceptors point away from the light source rather than towards it (Dawkins 1986:93).

Human language may well seem badly designed too, as indeed it has seemed to many philosophers in the Fregean tradition, if we look at it under a certain

perspective. As a communication device, for example, it is probably flawed in crucial respects, containing lots of structure that seems sub-optimal, redundant, or worse. But the mistake may lie with our perspective. Perhaps language is perfectly designed in the way of pairing sounds with meanings, using a minimum of resources to accomplish this mapping, without these sound-meaning pairs necessarily being ‘ready to use’. The question of mind design is not an *a priori* one, and even if a hypothesis of perfect design were to fail, the apparent imperfections in our object of study, which only an actual exploration of this hypothesis could reveal, will be of interest. Where we find an aspect of the design not as we would rationally expect it, we will have something interesting to explain.

Our foray into the field of generative grammar will thus lead us to explore the ‘minimalist thesis’ that even minimal design specifications for features that the faculty of language *needs* to have to play its role in the functional organization of the mind—together with general, non-language-specific, properties of computational systems in nature—actually *suffice* to rationalize the structure which this faculty is empirically found to have. There is no structure apart from the one it needs to have. Any extent to which we could vindicate such a thesis would be surprising, and it would clearly open up an entirely new perspective not only on language, but also on human nature, on empirical grounds.

My aim to advertise a position may perhaps seem modest—especially from a theoretical linguistic perspective—were it not for the fact that the formalism and rationalism I will develop has been in eclipse for much of twentieth century philosophy, with a concomitant loss of a former prime topic of the rationalist tradition, human nature. Much current philosophy still rests on three pillars, externalism, metaphysical naturalism, and functionalism, which are precisely the pillars that centrally characterized Skinnerian behaviorism (Chomsky 1959). The meanings of these terms have changed, but it is worth asking how much. There are various philosophical tendencies today that are said to be ‘rationalist’, be it because of their emphasis on the objectivity of reason (Nagel 1997), their commitment to some substantive notion of innate knowledge (Fodor 1981, 1998), or their defence of some version of *a priori* knowledge (Peacocke 2002). Yet, human nature, as a theoretical concept, figures in none of them in any central way. Aspects of all these rationalisms will figure in the present one, but the rationalism developed here is a unique brand, as it combines with an internalism and methodological naturalism in what I think is an unfamiliar way in philosophy today.

So, on the one hand this book is addressed to philosophers, whom I invite to join me in a journey through the world of theoretical linguistics, a field still disconnected from much research and education in the analytic philosophy of language. On a most general level, my message is that language is of an *intrinsic*, not merely an instrumental, interest to us as philosophers: language is *more* than a deficient tool for the expression of our thoughts, a code for propositional contents, an idiom to be ‘regimented’ by the means of modern logic, or an

instrumental device for representing reality or for communication. The point of language in its ordinary use, to put it somewhat drastically, is not to relate us to the external world, but actually to *free* our mind from the control of the external stimulus, from having to talk about the world as it actually is, as opposed to how it might be, was or will be. The hallmark of human language use is its creativity, or the *lack* of a connection to the immediate physical context and the adaptive challenges it poses. As a consequence of that, humans alone may have a history. Lacking language, all non-humans animals are stuck in the here and now.

On the other hand, this book is directed to students and researchers of all persuasions who work in the language and cognitive sciences. I hope to convince them that all research on the human language faculty, no matter how data-driven it may seem, always rests on philosophical ideas and ideals. Indeed it must be, given the prevailing unclarity on such matters as mind and meaning. Generative grammar not other than cognitive or functionalist linguistics are also, and at heart, philosophical projects. Realizing this, and patiently addressing the philosophical issues involved, might help us to gain a deeper understanding of intellectual divides that keep disuniting the field in unproductive ways.

It is particularly clear that the Chomskyan version of generative grammar and the Minimalist Program (MP) as its most recent incarnation, are also and inherently philosophical projects, at least if we understand philosophy in the traditional sense of seventeenth and eighteenth century ‘natural philosophy’. Moreover, Chomsky is the philosophical thinker in which I see the above trias of methodological naturalism, internalism, and rationalism come together, and although this book does not claim to be a correct analysis of his views, or even attempts one, virtually all that follows is inspired by what I take to be these views. The degree of perfection of the design of our mind, in the sense above, is the MP’s main question. Crucially, the MP is a piece of (formalist) computational *biology* for me: it is neither an expression, nor even supportive of functionalism, be it in the broad sense above, or in the specific sense of the metaphysical doctrine in the philosophy of mind that runs under this label, including the Fodorian ‘Representational Theory of Mind’.

By and large, I regard contemporary work in the study of human language as vindicating the denial by seventeenth and eighteenth century thinkers of a ‘representational theory of mind’. According to that theory, the mind derives its content from the way it ‘mirrors’ an environment, and mental representations are relationally defined as inner signs or stand-ins for outer objects. I shall dispute that this particular idea is prominent in any way in the ‘natural philosophies’ of either Galileo, Descartes, Locke, Hume, or Leibniz. It is because I find these historical connections not only fascinating but positively helpful in understanding our current philosophical predicament that this book devotes so much of its space to early modern thought.

As a consequence of these aims, one half of this book (Chapters 1–3), will speak more to philosophers, while the other half (Chapters 4–6) will speak more to

xii *Preface*

linguists. But since my interdisciplinary effort is genuine, my hope is precisely to have linguists read the former half, and philosophers the latter, even though they might find just these parts occasionally more hardgoing.

Taking Minimalism as an inspiration, my first aim, in part I, will be to resuscitate a formalist framework for thinking about human nature, considered as a central topic for philosophical inquiry, and as a basis for the philosophies of mind and language. The study of the human mind, for me, *is* the study of (human) nature, mentality being one of the latter's crucial aspects.

In Chapters 4–6 I turn directly to human language and give an introduction to the generative framework with an eye on philosophical and epistemological implications, and the explanatory vision that motivates the generative enterprise. Chapter 5 contains what I hope to be a self-contained introduction to current generative grammar. Chapter 6 pulls the various strands of the book together in a synthesis that is centred on the question of human mind design.

Acknowledgements

Chomsky's *The Minimalist Program* fell into my hands accidentally in the spring of 1999. As sometimes happens with books that fall into one's hands, I thought 'tremendously interesting', but also wondered, 'would anyone take this *really* seriously?' The idea in question was the idea of *Minimal Mind Design* – the idea of rationalizing the human language faculty as a perfect solution to a problem of satisfying minimal design specifications. Inquiring a little further, I found that its author certainly was serious about what he was saying, *very* serious. Not long afterwards, the quiet and peaceful surroundings of the medieval city of Regensburg, embedded in lower Bavaria, turned out to be a perfect place to pursue exceedingly arcane ideas. I wish to express my heartfelt thanks to many people for simply looking with *sympathy* at what I was doing, but also for supporting it in any way they could, and for providing me with a wonderful environment to work in: especially Hans Rott, Carsten Reinhardt, Christoph Meinel, Wolfgang Gebhardt, Holmer Steinfath, the history of science group at large, and Andreas Eidenschink and Maria Kronfeldner.

As I explored the paths that led to this book I benefited in various ways from the help of, and conversations with David Adger, Cedric Boeckx, Andrew Carstairs-McCarthy, Noam Chomsky, John Collins, Kit Fine, Jerry Fodor, Norbert Hornstein, Hans Kamp, Ruth Kempson, Michiel van Lambalgen, Giuseppe Longobardi, Paul Pietroski, Tanya Reinhardt, Martin Stokhof, Georges Rey, Benjamin Shaer, Neil Smith, and Helmut Weiss. I would like to express my gratitude to Massimo Piattelli-Palmarini and James McGilvray, as well as two anonymous referees for Oxford University Press for reading the manuscript and commenting generously. John Davey, my editor from Oxford, has from the start been a pleasure to deal with, and I thank him warmly for his almost immediate interest in this project. Jess Smith has done a formidable job in likening the language of this look more to English. Whatever the reader may think of my English, without her everything would be much worse. My greatest thanks, however, go to Juan Uriagereka, whose interest and help, at a stage when I hardly knew what I was talking about, was one of the happiest incidents of my career. My indebtedness will be obvious throughout, while any mistakes will of course remain my own.

Two postdoctoral fellowships at Columbia University and New York University, both generously funded by the Swiss National Foundation of Science, were particularly inspiring. Equally important were two other research stays in the US, one at the Departments of Linguistics and Philosophy in Maryland, another at MIT, both made possible by personal research grants from the German Research Council (DFG).

xiv *Acknowledgements*

This book started out as an old-style ‘deutsche Habilitation’, which was ‘typically German’ not just because of that, but also because of its voluminous dimensions: by and large, my referees were unanimous that I had written two books rather than one. I am grateful to my editor, John Davey, for proposing an elegant way of achieving weight loss—publish two slim(mer) volumes instead. The second volume (Hinzen 2006a), also to be published by Oxford University Press, will be more technical in nature and will buttress the present framework through an internalist treatment of exactly those dimensions of language where the externalist view is putatively strongest, namely names (reference) and truth.