Contents

Preface v
Panel of Reviewers vii

Part I: Papers

Is Grammaticalization Glossogenetic?
Giorgos P. Argyropoulos 3

Mythology and the Evolution of Language
Alan Barnard 11

Symmetrical Artefacts, Internal Reward and Language Precursors in the Head
Brian Bayfy 19

Linguistic Adaptation at Work? The Change of Word Order and Case System from Latin to the Romance Languages
Christian Bentz, Morten H. Christiansen 26

Invariants and Variation in Biology and Language Evolution
Robert C. Berwick 34

From Neurons to Signs
Denis Bouchard 42

Cultural Ratcheting Results Primarily from Semantic Compression
Joanna J. Bryson 50

Iterated Learning of Multiple Languages from Multiple Teachers
David Burkett, Thomas L. Griffiths 58

On Protolinguistic ‘Fossils’: Subject-Verb vs. Verb-Subject Structures
Eugenia Casielles, Ljiljana Progovac 66

Numerosity, Abstraction, and the Emergence of Metaphor in Language
Frederick L. Coolidge, Thomas Wynn 74

Self-Organization and Emergence in Language, a Case Study for Color
Joachim De Beule, Joris Bleys 83

Prosodic Features in Northern Muriquis Vocalizations
Didier Demolin, César Ades, Fransisco D.C. Mendes 91
Have You Anything Unexpected to Say? The Human Propensity to Communicate Surprise and Its Role in the Emergence of Language
Jean-Louis Dessalles

The Innateness of Language: a View from Genetics
Karl C. Diller, Rebecca L. Cann

A New Theory of Language and its Implications for the Question of Evolution
Daniel Dor, Eva Jablonka

Horizontal Transmission of Call Features in Killer Whale Dialects
Olga A. Filatova, Erich Hoyt, Alexandr M. Burdin

Information and Influence in Animal Communication
Julia Fischer, Kurt Hammerschmidt

A Molecular Genetic Framework for Testing Hypotheses about Language Evolution
W. Tecumseh Fitch, Michael A. Arbib, Merlin Donald

Emergence of Aktionsarten: The First Step towards Aspect
Kateryna Gerasymova

Talking About Birds, Bees, and Primates Too. Implications for Language Evolution
Kathleen R. Gibson

The Effect of Social Popularities on Linguistic Categorization
Tao Gong

Exploring the Roles of Major Forms of Cultural Transmission in Language Evolution
Tao Gong

How To Identify the Units, Levels and Mechanisms of Language Evolution
Nathalie Gontier

Linguistic Analogy for Creativity and the Origin of Language
Takashi Hashimoto, Masaya Nakatsuka, Takeshi Konno

Applications of the Price Equation to Language Evolution
Gerhard Jäger

Interplay between Language, Navigation and Kin Selection
Dimitar Kazakov

Children Learn Sound Symbolic Words Better: Evolutionary Vestige of Sound Symbolic Protolanguage
Sotaro Kita, Katerina Kantartzis, Mutsumi Imai
A Sensorimotor Characterisation of Syntax, and its Implications for Models of Language Evolution

Alistair Knott

Why Robots?

Martin Loetzsch, Michael Spranger

Linguistic Arguments Probably Antedate Linguistic Predicates

Erkki Luuk

Towards a Simulation Model of Dialogical Alignment

Alexander Mehler, Petra Weiß, Peter Menke, Andy Lücking

Evolution of Grammatical Forms

Mieko Ogura, William S-Y Wang

The Silence of the Stones: On the Archaeological Record for (Neandertal) Language

Wil Roebroeks

Minimum Description Length and Generalization in the Evolution of Language

Giancarlo Schrementi, Michael Gasser

Thoughts on Evolution of Language from the Point of View of Brain Neuroanatomy and Development, and Object-Oriented Programming

H. Lee Seldon

The Evolution of Segmentation and Sequencing: Evidence from Homesign and Nicaraguan Sign Language

Ann Senghas, Asli Özyürek, Susan Goldin-Meadow

Exploring the Nature of a Systematicity Bias: an Experimental Study

Andrew D.M. Smith, Barbora Skarabela, Mónica Tamariz

Open-Ended Semantics Co-Evolving with Spatial Language

Michael Spranger, Simon Pauw, Martin Loetzsch

Lost in a Linguistic Jungle: What's in the Language Faculty?

Maggie Tallerman

The Role of Practice and Literacy in the Evolution of Linguistic Structure

Mónica Tamariz, J. Erin Brown, Keelin M. Murray

Acquisition Preferences for Negative Concord

Jacqueline van Kampen

The Predicability Tree. How, and Why?

Robert van Rooij
Strategy Competition in the Evolution of Pronouns: A Case-Study of Spanish Leismo, Laismo and Loismo
Remi van Trijp

336

Primming Through Constructional Dependencies: A Case Study in Fluid Construction Grammar
Pieter Wellens, Joachim De Beule

344

The Moving Target Argument and the Speed of Evolution
Bodo Winter

352

Part II: Abstracts

What is Special About the Language Faculty, and How Did It Get That Way?
Stephen R. Anderson

363

On the Origin of Universal Categorization Patterns: An In-Silica Experiment
Andrea Baronchelli, Tao Gong, Vittorio Loreto, Andrea Puglisi

365

Coordination of Language Strategies based on Communicative Fitness
Joris Bleys

367

Samplers, Maximisers and the Cultural Evolutionary Dynamics of Language
Richard A. Blythe

369

Acoustic Variability in Nonhuman Primates: Individuality and Social Context
Hélène Bouchet, Catherine Blois-Heulin, Alban Lemasson

371

Contexts of Language Diversity
Ingar Brinck

373

Coordinated Multi-Modal Expression and Embodied Meaning in the Emergence of Symbolic Communication
J. Erin Brown

375

Do Ape Gestures Have Specific Meanings? Shifting the Focus from Flexibility to Semanticity
Erica A. Cartmill, Richard W. Byrne

377

Brains, Genes and Language Evolution
Morten H. Christiansen

379

Could Evo-devo Save Chomsky from the Evolutionary Paradox?
Hangjun Chu

381
Why Ape-Human Similarities and Learning Mechanisms Are Important: A Developmental and Cladistic Approach to the Evolution of Language 413

Patricia M. Greenfield

Evolving Linguistic Competence in the Absence of Performance 416

Marc D. Hauser

Simulating Creole and Dialect Formation 419

Zena Hira, Mark Bartlett

Ecological and Sexual Explanations for Larynx Lowering 421

Jean-Marie Hombert

Observing the Birth of Phonology 423

Assaf Israel, Wendy Sandler

Relaxation of Selection Can Lead to Signal Variations: An Example in Birdsong 425

Hiroko Kagawa, Hiroko Yamada, Ruey-Singh Lin, Kazuo Okanoya

The Co-Involvement of Hands and Mouth in Utterance Construction: Implications for Language Origins Theories. 427

Adam Kendon

Relationship Between Iconic Gestures and Sound Symbolic Words: Evidence for Multimodal Protolanguage 429

Sotaro Kita, Asli Özyürek, Shanley Allen, Tomoko Ishizuka

Cooperative Breeding Models: Implications for the Evolution of Language 431

Chris Knight, Camilla Power

Contributions of Aphasiology to Language Evolution Research 433

Andreas Kyriacou, Sverker Johansson

How Important Are Words for Conceptual Coordination? 435

Cyprian Laskowski, Martin Pickering

Vocal Abilities in a Group of Nonhuman Primates 437

Alban Lemasson, Klaus Zuberbühler

Vocal Deception From a Hunter-Gatherer Perspective 439

Jerome Lewis, Chris Knight

The Emergence Of Self-Organization In Language: Evidence From English Word Formation 441

Mark Lindsay, Mark Aronoff

Beyond Communication: Language Modulates Visual Processing 443

Gary Lupyan
Declaratives in Apes: Impact of Environment on Purely Infomative Communications

Heidi Lyn, Patricia M. Greenfield, Sue Savage-Rumbaugh, Jamie Russell, Kristen Gillespe-Lynch, William Hopkins

Languages As Evolutionary Aggregates

Luke McCrohon

3D-Morphometric and Acoustic Analysis of Chimpanzee and Human Vocal Tracts, and Their Use in the Reconstruction of Neanderthal Vocal Tracts and Their Acoustic Potential

Sandra Martelli, Antoine Serrurier, Anna Barney, James Steele

The Cultural Evolution of Language in a World of Continuous Meanings

Cristina Matthews, Simon Kirby, Hannah Cornish

Investigation of Gestural vs Vocal Origins of Language in Nonhuman Primates: Distinguishing Comprehension and Production of Signals

Adrien Meguerditchian, Jacques Vauclair

The Interaction of Animacy and Word Order in Human Languages: A Study of Strategies in a Novel Communication Task

Irit Meir, Adi Lifshitz, Deniz Ilkbasaran, Carol Padden

On the Track of the Origin of Language: A Comparative Study Quantifying Hand Preference in Object Manipulation and Gestural Communication in Non Human Primates

Hélène Meunier, Jacques Vauclair

A Functional Transcranial Doppler Ultrasound Study of Brain Lateralisation in Stone Tool Making and Language

Georg Meyer, Sophie Wuerger, Natalie Uomini

The Evolution of Information Structure

Vanessa Micelli

A Missing Link in the Cultural Evolution of Language: Connecting Sequential Learning and Language Empirically

Jennifer Misyak, Morten H. Christiansen, J. Bruce Tomblin

Balancing Arbitrariness and Systematicity in Language Evolution

Padraic Monaghan, Morten H. Christiansen, Stanka Fitneva

Speaker-Independent Perception of Human Speech by Zebra Finches

Verena R. Ohms, Arike Gill, Caroline A.A. van Heijningen, Gabriel J.L. Beckers, Carel ten Cate

An Avian Model for Language Evolution

Irene Pepperberg
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grooming Gestures of Chimpanzees in the Wild: First Insights Into</td>
<td>471</td>
</tr>
<tr>
<td>Meaning and Function</td>
<td></td>
</tr>
<tr>
<td><em>Simone Pika, Chris Knight</em></td>
<td></td>
</tr>
<tr>
<td>The Relevance of the Developmental Stress Hypothesis to the Evolution</td>
<td>473</td>
</tr>
<tr>
<td>of Language</td>
<td></td>
</tr>
<tr>
<td><em>Anne Pritchard</em></td>
<td></td>
</tr>
<tr>
<td>Co-Evolution of Language and Social Network Structure through Cultural</td>
<td>475</td>
</tr>
<tr>
<td>Transmission</td>
<td></td>
</tr>
<tr>
<td><em>Justin Quillinan, Simon Kirby, Kenny Smith</em></td>
<td></td>
</tr>
<tr>
<td>The Origins of Sociolinguistic Marking and its Role in Language</td>
<td>477</td>
</tr>
<tr>
<td>Divergence: an Experimental Study</td>
<td></td>
</tr>
<tr>
<td><em>Gareth Roberts</em></td>
<td></td>
</tr>
<tr>
<td>Considering Language Evolution from Birdsong Development</td>
<td>479</td>
</tr>
<tr>
<td>*Kazutoshi Sasahara, Miki Takahasi, Kenta Suzuki, Olga Féher, Ofer</td>
<td></td>
</tr>
<tr>
<td>Tchernichovski, Kazuo Okanoya*</td>
<td></td>
</tr>
<tr>
<td>Semantic Bootstrapping of Grammar in Embodied Robots</td>
<td>481</td>
</tr>
<tr>
<td><em>Yo Sato, Joe Saunders</em></td>
<td></td>
</tr>
<tr>
<td>Why Do Wild Chimpanzees Produce Food-Associated Calls: A Case of</td>
<td>483</td>
</tr>
<tr>
<td>Vocal Grooming?</td>
<td></td>
</tr>
<tr>
<td><em>Anne Schel, Klaus Zuberbühler, Katie E. Slocombe</em></td>
<td></td>
</tr>
<tr>
<td>The Importance of Exploring Non-Linguistic Functions of Human Brain</td>
<td>485</td>
</tr>
<tr>
<td>Language Areas for Explaining Language Evolution</td>
<td></td>
</tr>
<tr>
<td><em>P. Thomas Schoenemann</em></td>
<td></td>
</tr>
<tr>
<td>Language Evolution: The View from Adult Second Language Learners</td>
<td>487</td>
</tr>
<tr>
<td><em>Marieke Schouwstra</em></td>
<td></td>
</tr>
<tr>
<td>The Evolution of Communication and Relevance</td>
<td>489</td>
</tr>
<tr>
<td><em>Thomas Scott-Phillips</em></td>
<td></td>
</tr>
<tr>
<td>Pragmatics Not Semantics As the Basis for Clause Structure</td>
<td>491</td>
</tr>
<tr>
<td><em>Thomas Scott-Phillips, James R. Hurford, Gareth Roberts, Sean Roberts</em></td>
<td></td>
</tr>
<tr>
<td>Production Of The Vowels /a, i, u/ Based on an Articulatory Model of</td>
<td>493</td>
</tr>
<tr>
<td>Feeding</td>
<td></td>
</tr>
<tr>
<td><em>Antoine Serrurier, Anna Barney</em></td>
<td></td>
</tr>
<tr>
<td>Vocal Or Gestural? What Empirical Comparative Evidence Can and</td>
<td>495</td>
</tr>
<tr>
<td>Cannot Currently Tell Us about Language Evolution</td>
<td></td>
</tr>
<tr>
<td><em>Katie E. Slocombe, Bridget Waller, Katja Liebal</em></td>
<td></td>
</tr>
</tbody>
</table>
Regularisation of Unpredictable Variation Through Itertated Learning
Kenny Smith, Elizabeth Wonnacott 497

Implausibly Cooperative Robots Meet Their Selfish Gene Counterparts
Luc Steels, Chris Knight 499

Identifying Selective Pressures in Language Evolution: Pólya Urns and the Price Equation
Mónica Tamariz 501

What Are The Analogues of Genotype and Phenotype in the Cultural Evolution of Language?
Mónica Tamariz 503

Acoustic Potential For Reference-Like Communication in Wild Indris
Valeria Torti, Viviana Sorrentino, Cristina Giacoma, Marco Gamba 505

Simple Rules Can Explain Discrimination of Putative Recursive Syntactic Structures by Songbirds: a Case Study on Zebra Finches
Caroline A.A. van Heijningen, Jos de Visser, Willem Zuidema, Carel Ten Cate 507

The Critical Period and Preservation of Emerged Vowel Systems
Tessa Verhoef, Bart de Boer 509

Simulations of Socio-Linguistic Change: Implications for Unidirectionality
Maarten Versteegh, Federico Sangati, Willem Zuidema 511

Lessons for Evolution from First Language Development
Marilyn Vihman 513

The Relevance of Body Language to Evolution of Language Research
Slawomir Wacewicz, Przemysław Żywiczyński 515

Vocal and Facial Productions in Nonhuman Primates: Do They Express Emotions or Language Related Treatments?
Catherine Wallez, Jacques Vauclair 517

Language As Extended Phenotype?
Dennis Waters 519

Reconsidering the Code Model of Communication for Simulations of Language Evolution
Matthijs Westera 521

Cultural Evolution of Bird Song and Genetic Degradation of Learning Bias
Hajime Yamauchi, Terrence W. Deacon, Kazuo Okanoya 523

Optimality and Teleomatic Causes in the Faculty of Language
Hajime Yamauchi, Kazuo Okanoya 525