

Curriculum vitae

PERSONAL INFORMATION

Name: Tria Francesca

Date and place of birth: 06/12/1974, Rome, Italy.

Nationality: Italian

EDUCATION

2003, PhD in Physics, Univ. of Naples Federico II (Supervisor: Prof. Luca Peliti). Final thesis: Statistical models of evolution: Game theory and virus-immune system coevolution.

2000, *Laurea* in Physics (cum laude), Sapienza University of Rome (Supervisor: Prof. Giorgio Parisi). Final thesis: Spin glasses in diluted lattices.

CAREER

2016 Feb.-present, researcher (RtdA) at Sapienza University of Rome

2010 Feb.-2016 Jan., Research Scientist at ISI Foundation, Complex Systems Lab, Torino, Italy.

2006 Nov.-2010 Feb., Post-doctoral at ISI Foundation, Torino, Italy.

2004 Jan.-2006 Jan., Post-doctoral at the International Centre of Theoretical Physics (ICTP), Trieste, Italy.

CAREER BREAKS

2016 Nov.-2017 April, Maternity leave.

2012 Nov.-2013 April, Maternity leave.

OTHER POSITIONS AND HABILITATIONS

2017, Scientific National Habilitation (ASN) for Associate Professor in two different sectors of Theoretical Physics: Condensed Matter (FIS 02/B2) and Fundamental Interactions (FIS 02/A2), and in Applied Physics (FIS 02/D1).

2016- present, external faculty member of the Complexity Science Hub in Vienna (<https://www.csh.ac.at>).

2017 April-Sept., Visiting at ISI Foundation, Torino, Italy.

2015 April-May, Visiting at the SONY Computer Science Lab (SONY-CSL) in Paris (www.csl.sony.fr).

2011 April, Visiting at the Yeshiva University in New York, United States.

2009 August, Visiting at the Theoretical Physics Dep. of the Centro Atómico Bariloche, Argentina.

2002 Nov.-Dec., Visiting at the Institute for Theoretical Physics, Univ. of Cologne, Germany.

INSTITUTIONAL AND SCIENTIFIC RESPONSIBILITIES

2009-2016, Local coordination of the research group directed by prof. Vittorio Loreto at ISI Foundation.

2011-2014, Local coordination of the ISI team in the project EveryAware.

2014-2015, Local coordination at ISI of the project Elise.

2014-2017 Local coordination of the ISI team in the Kreyon project.

FUNDED PROJECTS

2018-2019 Consultancy contract between SONY Computer Science Laboratory (Paris) and the Physics Department at Sapienza Università di Roma. Theme: Innovation dynamics and Digital platform for sustainability and forecasting. Role: scientific manager.

2017 Progetto d'Ateneo: Modelling complex systems in the digital era. Role: participant.

2014 - 2017 Kreyon - Unfolding the dynamics of creativity, novelties and innovation - funded by the Templeton Foundation. Role: local coordinator at ISI.

2014 - 2015 Elise - Environment Live Sensing - funded in the framework of Programma operativo regionale (POR FESR) of Regione Piemonte. Role: participant and local coordinator at ISI.

2011 - 2014 EveryAware - Enhancing environmental awareness through social information technologies - (www.everyaware.eu), funded by the EU 7th Framework Programme (FP7). Role: participant and local coordinator at ISI.

TEACHING ACTIVITIES

a.y. 2018-2019, *Entropia, Complessità, Informazione*. Short course (8 hours) for the Honours Programme, (3rd year, Bachelor in Physics) at Sapienza Università di Roma, Physics Department.

a.y. 2018-2019, *Fisica dei sistemi complessi* (2nd year master students in Physics), at Sapienza Università di Roma, Physics Department.

a.y. 2017-2018, *Fisica dei sistemi complessi* (2nd year master students in Physics), at Sapienza Università di Roma, Physics Department.

a.y. 2015-2016, assistant professor for the course *Fisica I*, (1st year, Bachelor in Chemistry), at Sapienza Università di Roma, Chemistry Department.

a.y. 2015-2016, lecturer (6 hours) at the course *Fisica dei sistemi complessi* (2nd year master students in Physics), at Sapienza Università di Roma, Physics Department. Theme of the lessons: *Innovation dynamics*.

a.y. 2013-2014, lecturer (4 hours) at the course *Fisica dei sistemi complessi* (2nd year master students in Physics), at Sapienza Università di Roma, Physics Department. Theme of the lessons: *Power laws, Poly urns and Innovation*.

a.y. 2012-2011, lecturer (8 hours) at the course *Fisica dei sistemi complessi* (2nd year master students in Physics), at Sapienza Università di Roma, Physics Department. Theme of the lessons: *Evolutionary models and phylogenetic reconstruction*.

a.y. 2010-2011, lecturer (6 hours) at the course *Survey of Contemporary Physics (Honors Program)* at the Yeshiva University, Physics Department. Theme of the lessons: *Evolutionary models and phylogenetic reconstruction*.

a.y. 2010-2011, lecturer (6 hours) at the course *Fisica dei sistemi complessi* (2nd year master students in Physics), at Sapienza Università di Roma, Physics Department. Theme of the lessons: *Phylogenetic reconstruction and applications in biology and linguistics*.

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Co-supervisor:

Post-doctoral fellows:

Hamed Mahmoudi (2009), Animesh Mukherjee (2009-2011), Alina Sirbu (2011 - 2014), Alvaro Ruiz-Serrano (2014-2015), Christine Cuskley (2014-2015), Indaco Biazzo (2014-2017), Bernardo Monechi (2014-2017).

Phd students:

Simone Pompei (2009-2012). Phd thesis: *Phylogenetic trees: inference, analysis and modeling*. University of Turin, PhD Programme in Complexity in Post-Genomic Biology. Giovanna Chiara Rodi (2013-2017) Phd thesis: *Human exploration of complex knowledge spaces*. Department of Mathematical Sciences, Dottorato di Ricerca in Applied Mathematics – XXIX Ciclo.

Undergraduate students for the master degree thesis:

(2009) Simone Pompei. Thesis: *Comparative analysis of the efficiency of phylogenetic algorithms*. Sapienza University of Rome, physics department. (2010) Lorenzo Taggi. Thesis: *Percolation processes inspired by epidemic spreading*. Sapienza University of Rome, physics department. (2011) Martina Pugliese. Thesis: *Modeling viral evolutionary dynamics with epistatic interactions*. Sapienza University of Rome, physics department. (2012) Roberta Amato. Thesis: *A model for interacting random walkers*. Sapienza University of Rome, physics department. (2013) Marco Pietrosanto. Thesis: *Agent based study of cooperative effects and social norms*. Sapienza University of Rome, physics department. (2013) Giovanna Chiara Rodi. Thesis: *Statistical modeling of learning paths*. Sapienza University of Rome, physics department. (2015) Greta Greco. Thesis: *Super-diffusive processes in innovation dynamics*. Università degli Studi di Torino, physics department.

Undergraduate students for the bachelor thesis:

(2017) Pietro Pasanisi. Thesis: *Spazi delle possibilità nei modelli di emergenza delle novità*. Sapienza Università di Roma, physics department.

Supervisor:

Undergraduate students for the master degree thesis:

(2017-2018) Ambra D'amico. Thesis: *Inference and machine learning approach to the facial beauty perception process*. Sapienza Università di Roma, physics department.

(2017-2018) Margherita Lalli. Thesis: *Authorship attribution via sequence compression methods*. Sapienza Università di Roma, physics department.

(2018-2019) Gian Luca Lancia. Thesis: *Studio dell'apprendimento non supervisionato in reti neurali di tipo Boltzmann Machine*. Sapienza Università di Roma, physics department.

(2018-2019) Mattia Eluchans. Thesis: *Algoritmi di inferenza bayesiana per l'identificazione di topic nei testi*. Sapienza Università di Roma, physics department.

2018-present, Silvia Rognone

2018-present, Leonardo Pizzirani

ORGANISATION OF CONFERENCES AND WORKSHOPS

2011, PRIN Meeting 2008: Language, texts and keys. Bagnovignoni (Siena).

2015, the first public event of the Kreyon project, Palazzo delle Esposizioni, Rome (<http://www.kreyon.net/kreyonDay/>)

2015, Kreyon workshop, at Sapienza Univ. of Rome (<http://www.kreyon.net/kreyonWorkshop/>).

2016, Satellite workshop “CreativEvolang: Creativity and innovation in language evolution” at EvolangXI, New Orleans.

2016, Satellite workshop “Determinants of Creativity and Innovation in Science, Art and Technology” at CCS2016, Amsterdam, (<http://www.kreyon.net/ccs2016/>).

2016, the second public event of the Kreyon project (<http://www.kreyon.net/kreyonDays/>).

2017, Kreyon conference, “Unfolding the dynamics of creativity and innovation”, Palazzo delle Esposizioni, Rome (<http://kreyon.net/kreyonConference/>), and the open conference “The complexity of the future”, Palazzo delle Esposizioni, Rome (<http://kreyon.net/kreyonOpenConference/>).

EDITORIAL RESPONSIBILITIES

Co-editor of the book Language Dynamics, Special Issue of Advances in Complex Systems 15 (03n04) (<http://dx.doi.org/10.1142/S0219525912030026>).

Co-editor of the book Participatory Sensing, Opinions and Collective Awareness, Series Understanding Complex Systems, Springer International Publishing AG Editors: Loreto, V., Haklay, M., Hotho, A., Servedio, V.D.P., Stumme, G., Theunis, J., Tria, F. (Eds.), 2017, (ISBN 978-3-319-25658-0).

Referee activity for the international journals: Europhysics Letters, Physics A, EPJB, JSTAT, Cognitive Science, Language Dynamics and Change, Scientific Reports, Physical Review Letters, Advances in Complex Systems, Royal Society Open Science, PLOS ONE.

INVITED TALKS IN INTERNATIONAL SCHOOLS AND CONFERENCES

2018, CSH Public Conference: “Complexity – Where do we go from here?”, Complexity Science Hub, Vienna. (<https://www.csh.ac.at/news-external-faculty-where-to-go-from-here/>)

2017, Kreyon conference, “Unfolding the dynamics of creativity and innovation”, Palazzo delle Esposizioni, Rome (<http://kreyon.net/kreyonConference/>).

2016, Satellite of the Conference on Complex System 2016 (CCS2016) "Determinants of Creativity and Innovation in Science, Art and Technology".

2016, International Summer School at lake Como School of Advanced Study, “Creativity and evolution. Games, language, robots, life, art”.

2016, International workshop in Lipari “Complex Networks: from socio-economic systems to biology and brain”.

2015, Lorentz Center in Leiden, workshop: “Capturing Phylogenetic Algorithms for Linguistics”.

2015, Italian Physical Society (SIF) Congress, “Complex Systems” section.

2014, SigmaPhi2014 - International Conference on Statistical Physics 2014, Rhodes, Greece: “Complex Network workshop”.

2014, Evolang X, Vienna: workshop “How grammaticalization processes create grammar: From historical corpus data to agent-based models”.

2014, German Physical Society (DPG) meeting, Dresden: Section of Condensed Matter.

2014, Sapienza Univ. of Rome, workshop “On the emergence of consensus and misunderstanding”.

2010, INdAM Meeting - Hyperbolic Dynamical Systems in the Sciences. Corinaldo, Italy.

2007, Summer school: Statistical Physics of Gene Regulation - From Networks Expression Data and Back, Jacobs University, Bremen.

TALKS IN INTERNATIONAL CONFERENCES

2016 Conference on Complex Systems 2016 (CCS2016) Title: The dynamics of innovation through the expansion in the adjacent possible.

2016 STATPHYS26 : 26nd International Conference on Statistical Physics, Lyon, France, 2016. Title: The dynamics of innovation through the expansion in the adjacent possible.

2014 SigmaPhi2014 - International Conference on Statistical Physics 2014, Rhodes, Greece, main conference. Title: The dynamics of correlated novelties.

2012 Evolang IX - the 9th International Conference on the Evolution of Language, Kyoto, Japan. Title: Naming a structured world: a cultural route to duality of patterning.

2011 ECAL Satellite Workshop on Alife Approaches to Artificial Language Evolution, Paris, France. Title: Naming a structured world: a cultural route to duality of patterning. *Best paper prize*.
2010 BIOCAMP'10 - The 2010 International Conference on Bioinformatics & Computational Biology, Las Vegas. Title: A Fast Noise Reduction Driven Distance-Based Phylogenetic Algorithm.
2008 5th European Conference on Complex Systems (ECCS), Jerusalem. Title: A message-passing approach for graphs alignment.
2007 Jacobs University, Bremen. Workshop: Interfaces between physics and computer science. Bremen. Title: Classification of cancer tissues from microarray expression data.
2005 Workshop on Infectious Disease: Theoretical, Ecological and Economic Approaches, ICTP, Trieste. Title: A minimal model for influenza A evolution.
2005 Les Houches, France: Statistical Physics of Glasses, Spin Glasses, Information Processing and Combinatorial Optimisation. Title: On the Talagrand theorem in spherical p-spin models.

POSTER PRESENTATION IN INTERNATIONAL CONFERENCES

2004 STATPHYS22 : 22nd International Conference on Statistical Physics, Bangalore, India.
2002 Unifying Concepts in Glass Physics. Accademia dei Lincei, Roma.

INVITED LECTURES

Mantova, seminario pubblico nell'ambito di "Mantova Scienza" (<http://www.mantovascienza.it/>) (2017).
Medical University of Vienna, Section for Science of Complex Systems (in the framework of seminars on "Analysis of Complex Systems") (2015).
Yeshiva University, NY, Psychology Dept. (2010, 2011) and Physics Dept. (2011).
Meeting PRIN 2008: Language, texts and keys. Bagnovignoni (2011).
Centro Atómico Bariloche, San Carlos de Bariloche, Argentina (2009).

PUBLICATIONS

IN PREPARATION

Enrico Ubaldi, Francesca Tria, Raffaella Burioni and Vittorio Loreto, *The exploration of the Adjacent Possible explains the emergence and evolution of social networks*.

INTERNATIONAL PEER-REVIEWED JOURNALS

1. Francesca Tria, Vittorio Loreto, Vito D.P. Servedio, *Zipf's, Heaps' and Taylor's laws are determined by the expansion into the adjacent possible*. Entropy **2018**, 20(10), 752 (2018).
2. Bernardo Monechi, Alvaro Ruiz-Serrano, [Francesca Tria](#), and Vittorio Loreto, *Waves of novelties in the expansion into the adjacent possible*. PloS one 12 (6), e0179303 (2017).
3. Giovanna Chiara Rodi, Vittorio Loreto, [Francesca Tria](#), *Search Strategies of Wikipedia Readers*. PloS one 12 (2), e0170746 (2017).
4. Jason Sakellariou, Vittorio Loreto, Francois Pachet, [Francesca Tria](#), *Maximum entropy model captures melodic styles*. Scientific Reports 7 (1), 9172 (2017).
5. Bernardo Monechi, Pietro Gravino, Vito D. P. Servedio, [Francesca Tria](#) and Vittorio Loreto, *Significance and popularity in music production*. Royal Society open science 4 (7), 170433 (2017).
6. M Pugliese, V Loreto, S Pompei, F Tria. *Exploring the evolution of pathogens organised in discrete antigenic clusters*. Journal of Statistical Mechanics: Theory and Experiment 2016 (9), 093306 (2017).
7. Christine Cuskley, Claudio Castellano, Francesca Colaiori, Vittorio Loreto, Martina Pugliese, [Francesca Tria](#), *The regularity game: Investigating rule dynamics in a population of interacting agents*. Cognition 159, 25-32 (2017).
8. Christine Cuskley, Francesca Colaiori, Claudio Castellano, Vittorio Loreto, Martina Pugliese, [Francesca Tria](#), *The adoption of linguistic rules in native and non-native speakers: Evidence from a Wug task*. Journal of Memory and Language, 84, 205-223 (2015).

9. Alina Sîrbu, Martin Becker, Saverio Caminiti, Bernard De Baets, Bart Elen, Louise Francis, Pietro Gravino, Andreas Hotho, Stefano Ingarra, Vittorio Loreto, Andrea Molino, Juergen Mueller, Jan Peters, Ferdinando Ricchiuti, Fabio Saracino, Vito D. P. Servedio, Gerd Stumme, Jan Theunis, Francesca Tria, Joris Van den Bossche, *Participatory Patterns in an International Air Quality Monitoring Initiative*. PLoS ONE, <http://dx.doi.org/10.1371/journal.pone.0136763>, (2015).
10. G.C. Rodi, V. Loreto, V.D.P. Servedio, and F. Tria, *Optimal learning paths in information networks*, Scientific Report 5, Article number: 10286. doi:10.1038/srep10286 (2015).
11. Francesca Tria, Vito D.P. Servedio, Vittorio Loreto, and Salikoko S. Mufwene, *Modeling the emergence of contact languages*, PLoS ONE 10(4) (2015).
12. F. Colaiori, C. Castellano, C. Cuskley, V. Loreto, M. Pugliese, F. Tria, *General three-state model with biased population replacement: Analytical solution and application to language dynamics*, Phys. Rev. E 91 (2015).
13. Cuskley CF, Pugliese M, Castellano C, Colaiori F, Loreto V, Tria F, *Internal and External Dynamics in Language: Evidence from Verb Regularity in a Historical Corpus of English*, PLoS ONE 9(8): e102882. doi:10.1371/journal.pone.0102882 (2014).
14. F. Tria, V. Loreto, V.D.P. Servedio and S.H. Strogatz, *The dynamics of correlated novelties*, Scientific Report 4, Article number: 5890. doi:10.1038/srep05890 (2014).
15. Becker, M., Caminiti, S., Fiorella, D., Francis, L., Gravino, P., Haklay, M., Hotho, A., Loreto, Mueller, J., Ricchiuti, F., V., Servedio, VDP., Sîrbu, A., Tria, F. (2013), *Awareness and learning in participatory noise sensing*, PLoS ONE, 8(12): e81638.
16. A. Sîrbu, V. Loreto, V.D.P. Servedio and F. Tria, *Cohesion, consensus and extreme information in opinion dynamics*, Advances in Complex Systems, 16 (1350035).
17. F. Tria, S. Pompei, V. Loreto, *Dynamical correlated mutations drive human Influenza A evolution*, Scientific Reports 3, Article number: 2705. doi:10.1038/srep02705. (2013).
18. S.K. Maity, A. Mukherjee, F. Tria and V. Loreto, *Emergence of fast agreement in an overhearing population: The case of naming game*, Euro. Phys. Lett., 101, 68004 (2013).
19. A. Sîrbu, V. Loreto, V.D.P. Servedio and F. Tria, *Opinion dynamics with disagreement and modulated information*, Journal of Statistical Physics, Volume 151, Issue 1-2, pp 218-237 (2013).
20. L. Taggi, F. Colaiori, V. Loreto and F. Tria, *Dynamical correlations in the escape strategy of Influenza A virus*, Euro. Phys. Lett., 101, 68003 (2013).
21. S. Pompei, V. Loreto and F. Tria, *Phylogenetic properties of RNA viruses*, PLoS ONE 7(9): e44849 (2012).
22. F. Tria, B. Galantucci and V. Loreto, *Naming a structured world: a cultural route to duality of patterning*, PLoS ONE 7(6): e37744 (2012).
23. V. Loreto, A. Mukherjee and F. Tria, *On the origin of the hierarchy of color names*, Proceedings of the National Academy of Sciences (PNAS) 109 (18), pag. 6819-6824, (2012).
24. A. Mukherjee, V. Loreto and F. Tria, *Why are basic color terms basic?*, Advances in Complex Systems (ACS) 15, 1150016 (2012).
25. S. Pompei, V. Loreto and F. Tria, *On the accuracy of language trees*, PLoS ONE, 6(6), e20109 (2011).

26. V. Loreto, A. Baronchelli, A. Mukherjee, A. Puglisi and F. Tria, *Statistical physics of language dynamics*, J. Stat. Mech. (2011) P04006.
27. F. Tria, A. Mukherjee, A. Baronchelli, A. Puglisi and V. Loreto, *A fast no-rejection algorithm for the Category Game*, Journal of Computational Science 2 (4), pag.316-323 (2011).
28. A. Mukherjee, F. Tria, A. Baronchelli, A. Puglisi and V. Loreto, *Aging in language dynamics*, PLoS ONE, 6(2), e16677 (2011).
29. S. Pompei, E. Caglioti, V. Loreto and F. Tria, *Distance-based Phylogenetic algorithms: new insights and applications*, M3AS, 20 Supplementary Issue 1, pp. 1511-1532 (2010).
30. F. Tria, E. Caglioti, V. Loreto and A. Pagnani, *A stochastic local search approach to language trees reconstruction*, Diachronica XXVII:2 (2010). Special issue: Quantitative Approaches to Linguistic Diversity: Commemorating the centenary of the birth of Morris Swadesh.
31. F. Tria, E. Caglioti, V. Loreto and A. Pagnani, *A Stochastic Local Search algorithm for distance-based phylogeny reconstruction*, Molecular Biology and Evolution, 27, 2587-95 (2010).
32. S. Bradde, A. Braunstein, H. Mahmoudi, F. Tria, M. Weigt and R. Zecchina, *Aligning graphs and finding substructures by a cavity approach*, Europhys. Lett. 89, 37009 (2010).
33. A. Pagnani, F. Tria and M. Weigt, *Classification and sparse-signature extraction from gene-expression data*, J. Stat. Mech. P05001 (2009).
34. S. Franz and F. Tria, *A note on the Guerra and Talagrand theorems for Mean Field Spin Glasses: the simple case of spherical models*, Journal of Statistical Physics 122, 313-332 (2006).
35. F. Tria, M. Lässig, L. Peliti and S. Franz, *A minimal stochastic model for Influenza evolution*, JSTAT: Journal of Statistical Mechanics: Theory and Experiment, P07008 (2005).
36. M. Lässig, L. Peliti and F. Tria, *Evolutionary games and quasispecies*, Europhysics Letters 62 446 (2003).
37. G. Parisi and F. Tria, *Spin glasses on Bethe lattices for large coordination number*, Eur. Phys. J. B 30, 533-541 (2002).

PROCEEDINGS

1. Margherita Lalli, Francesca Tria and Vittorio Loreto, *Data-compression approach to authorship attribution*, Proceeding of the Workshop "Drawing Elena Ferrante's Profile", Padova University Press (2018).
2. Simone Pompei, Francesca Tria and Vittorio Loreto, *Copystree: gaming artificial phylogenies*, Language Dynamics and Change, 8 (1): 55-77 (2018).
3. Pietro Gravino, Bernardo Monechi, Vito D. P. Servedio, Francesca Tria and Vittorio Loreto, *Crossing the horizon: exploring the adjacent possible in a cultural system*, Proceedings of The Seventh International Conference on Computational Creativity (ICCC16), (2016).
4. M. Pugliese, V. Loreto, C. Cuskley, C. Castellano, F. Colaiori and F. Tria, *The role of coordination in regularization*, In: E. Cartmill, S. Roberts, H. Lyn and H. Cornish (eds.), The Evolution of Language (Evolang): Proceedings of the 10th International Conference, p 260-261. London: World Scientific.
5. Cuskley, C., Castellano, C., Colaiori, F., Loreto, V., Pugliese, M. and Tria, F. (2014). *Frequency and stability of linguistic variants*. In: Cartmill, E., Roberts, S., Lyn, H. and Cornish, H. (Eds.), The Evolution of Language (Evolang): Proceedings of the 10th International Conference, p 417-418. London: World Scientific.

6. V. Loreto, P. Gravino, V.D.P. Servedio and F. Tria, *On the emergence of syntactic structures: quantifying and modelling duality of patterning*, Proceedings of the Workshop on Origins of Communication Systems: Modeling and Ethologically-based Theory, Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria (2013). Special Issue of topiCS on New frontiers in language evolution and development.
7. Caminiti, S., Cicali, C., Gravino, P., Loreto, V., Servedio, V.D.P., Sîrbu, A., Tria, F. (2013), *XTribe: a web-based social computation platform*, IEEE Proceedings of the Third International Conference on Cloud and Green Computing, pp 397-403, Karlsruhe, Germany.
8. C. Cicali, P. Gravino, V. Loreto, G. Paolacci, V.D.P. Servedio, F. Tria, M. Warglien, *Experimental tribe: a new general platform for web-gaming and social computation*, Proceedings of Second Workshop on Computational Social Science and the Wisdom of Crowds (NIPS 2011).
9. F. Tria, E. Caglioti, V. Loreto, S. Pompei, *A Fast Noise Reduction Driven Distance-Based Phylogenetic Algorithm*, Proceedings of BIOCAMP'10 - The 2010 International Conference on Bioinformatics & Computational Biology (2010).
10. L. Peliti, F. Tria and M. Lässig, *Quasispecies evolution in phenotypic space*, Proceedings of the International Conference BIOCAMP 2002, Vietri sul Mare, 3-9 June 2002.

BOOK CHAPTERS AND INVITED CONTRIBUTIONS

1. V. Loreto, V.D.P. Servedio, S.H. Strogatz, F. Tria, *Dynamics on expanding spaces: modeling the emergence of novelties*, in: Mirko Degli Esposti, Eduardo G. Altmann, François Pacht (Ed.): *Creativity and Universality in Language*, pp. 59-83, Springer International Publishing, 2016, ISBN: 978-3-319-24401-3 (2016).
2. F. Tria, *The dynamics of innovation through the expansion in the adjacent possible*, IL NUOVO CIMENTO C, vol.39, ISSN:2037-4909, (2016).
3. Vittorio Loreto and Francesca Tria, *Language games: Comment on Modelling language evolution: Examples and predictions by Tao Gong, Lan Shuai, Menghan Zhang*, Physics of Life Reviews, ISSN 1571-0645, <http://dx.doi.org/10.1016/j.plrev.2014.01.006> (2014).
4. F. Tria and V. Loreto, *The Blending Game: emergence of duality of patterning in an interacting population*, book chapter, L. Steels ed., Springer (2013).
5. A. Baronchelli, V. Loreto and F. Tria, *Language Dynamics (Editorial)*, Advances in Complex Systems (ACS) 15, 1203002 (2012).
6. V. Loreto and F. Tria, *In Silico Linguistics: Comment on "Modeling the cultural evolution of language" by Luc Steels*, Physics of Life Reviews, 8, Issue 4, pp. 339-356, (2011).
7. V. Loreto and F. Tria, *Linguistica "in silico"*, invited contribution for Sistemi Intelligenti, August 2011, pag. 319-328.

BOOKS

V. Loreto, A. Baldassarri, V.D.P. Servedio and F. Tria, *Fisica generale. Meccanica. 130 esercizi risolti*, McGraw Hill ISBN: 978-88-386-6795-4 (2012).

A. Baronchelli, V. Loreto, F. Tria (Eds.), *Language Dynamics*, Special Issue of Advances in Complex Systems 15 (03n04) (2012).

V. Loreto, M. Haklay, A. Hotho, V.D.P. Servedio, G. Stumme, J. Theunis, F. Tria (Eds.), *Participatory Sensing, Opinions and Collective Awareness*, Series Understanding Complex Systems, Springer International Publishing AG, ISBN: 978-3-319-25656-6 (Print) 978-3-319-25658-0 (Online) (2016).

V. Loreto, V.D.P. Servedio, F.Tria, *The science of the new*, Oxford University Press, In preparazione.

NATIONAL AND INTERNATIONAL PRESS COVERAGE

“Colours: Differing points of hue”. Philip Ball, Under the radar, BBC - Future, 27th April 2012.

(<http://www.bbc.com/future/story/20120427-when-is-a-colour-not-a-colour>)

“Hierarchy of Color Naming Matches the Limits of Our Vision System”. Charles Choi, LiveScience, 16th April 2012. (<http://www.livescience.com/19704-colors-names-human-vision.html>)

“Hierarchy of Color Naming Matches the Limits of Our Vision System”. Charles Choi, Scientific American, 16th April 2012. (<http://www.scientificamerican.com/article.cfm?id=how-colors-get-their-name>)

“Na wit en zwart komt altijd rood”. Hilde Van den Eynde, De Standaard, 17th April 2012.

(<http://www.standaard.be/artikel/detail.aspx?artikelid=FA3OQMJT>)

“Riddled with irregularities: Why are languages so different and disorderly?” Philip Ball, Prospect Magazine, 22 August 2012. (<http://www.prospectmagazine.co.uk/magazine/riddled-with-irregularity/>)

The Mathematics of Novelties and Innovations. Samuel Arbesman, 08.06.14 Wired

(<http://www.wired.com/2014/08/the-mathematics-of-novelties-and-innovations/>)

The mathematics of discovering new things. Rachel Feltman, The Washington Post, August 1, 2014.

(<http://www.washingtonpost.com/news/speaking-of-science/wp/2014/08/01/the-mathematics-of-discovering-new-things/>)

News Picks: Mathematical model explores evolution through correlated novelties Physics Today 04 agosto 2014.

(<http://scitation.aip.org/content/aip/magazine/physicstoday/news/news-picks/mathematical-model-explores-evolution-through-correlated-novelties-a-news-pick-post>)

Come ti misuro l'innovazione. Josephine Condemi, *nòva* (Il Sole 24 ore), 18 Febbraio 2018.

Mathematical Model Reveals the Patterns of How Innovations Arise, MIT technology review (2017)

(<https://www.technologyreview.com/s/603366/mathematical-model-reveals-the-patterns-of-how-innovations-arise/>)