



Claudio Zandonella Callegher

Personal data

Place and date of birth:	San Candido (BZ), Italy, 24 April 1993
Residence:	Via Celeste de Martin n°19, Dosoleto (BL), 32040, Italy
Nationality	Italian
E-mail address:	claudiozandonella@gmail.com
Institution	Department of Developmental Psychology and Socialisation, University of Padova, Italy http://dottorato.psy.unipd.it/it/users/claudio-zandonella-callegher
Research group	Psicostat http://ip146179.psy.unipd.it/psicostat/web/

Research Interests and Projects

RESEARCH INTERESTS

Application of Bayesian approach and new statistical methods in psychology. In particular:

- ▶ Bayesian model comparison to evaluate and compare informative hypotheses.
- ▶ Formalization of models and prior distributions according to theoretical and research hypotheses.
- ▶ Elicitation of experts' knowledge to formalize priors about effects of interest.
- ▶ Evaluation of statistical inference errors in the case of underpowered studies (small sample size).
- ▶ Use of STAN programming language for Bayesian analysis.

PROJECTS

1. *Dogs behaviour*: I am working with animal behaviour experts to formalize their expectation about the plausible effect of their new experiment with dogs. This will allow to conduct a power analysis and define an adequate sample size.
2. *Attachment*: We are formalizing the different theoretical perspectives about the relation between father and mother attachment with internalizing and externalizing problems. We will evaluate the different theories on the base of data already collected.
3. *Clinical application*: We are planning an application of experts' elicitation in a clinical research setting, where the sample size is notoriously small and then informative priors play even a more important role.

University Education

2018-PRESENT — PHD IN PSYCHOLOGICAL SCIENCES XXXIV CYCLE

University of Padua

Project: “Predicting social-emotional adjustment in childhood: a Bayesian approach with informative priors”. Tutor: Gianmarco Altoè, Livio Finos

2016-2018 — MASTER’S DEGREE IN PSYCHOLOGY (LM-51)

University of Padua

Thesis title: “Analyzing the role of father attachment in middle childhood: a Bayesian approach”. Tutor: Gianmarco Altoè

Graduation grade: 110/110 with honors.

2013-2016 — BACHELOR'S DEGREE IN PSYCHOLOGICAL SCIENCES AND TECHNIQUES (L-24)

University of Padua

Thesis title: "Proximity: evidence of possession in childhood". Tutor: Teresa Farroni

Graduation grade: 110/110 with honors.

Courses and Conferences

COURSES

2019 — *Summer School on Statistical Methods for Linguistics and Psychology*. Advanced Bayesian methods using Stan: hierarchical modeling, multinomial processing trees, measurement error models, modeling censored data, finite mixture models, model selection and hypothesis testing (9-13 September 2019; Potsdam, Germany).

2019 — *StanCon2019*. Tutorial for hierarchical modeling and model selection with Stan. Tutorial for Population and ODE-based models using Stan and Torsten (20-21 August 2019; Cambridge, UK).

2019 — *Theory and Methods of Inference*. PhD course held by Prof. A. Salvan at the doctoral programme in Statistics at University of Padua (64 hours).

2019 — *Sheffield ELicitation Framework (SHELF) Training*. Training held by Prof. T. O’Hagan about elicitation of probability distributions for uncertain quantities from experts (8-9 April 2019; Sheffield, UK).

2019 — *Beyond $p < .05$: Modern statistical approaches in psychological science*. International Winter School about recent perspectives on statistical methods in psychological science: critical aspects of Null Hypothesis Significance Testing, open science, pre-registered studies, Bayesian approach, data mining and big data (18-22 February 2019; Padova, Italy).

2018 — *Functional Analysis*. PhD course held by Prof. A. Cesaroni at the doctoral programme in Statistics at University of Padua (24 hours).

CONFERENCES

2019 — *XXV AIP National Congress Experimental section*, Italian association of psychology (18-20 September 2019; Milan, Italy).

2019 — *IV SIPS International Conference*, Society for the Improvement of Psychological Science (7-9 July, 2019; Rotterdam, the Netherlands).

2018 — XXV AIP National Congress section of Developmental and Educational Psychology, Italian association of psychology (17-19 September 2019; Turin, Italy).

Experience in Research and Teaching

2019 — Supplementary teaching (10 hours) in the course held by Prof. A. Calcagni, Psychological Testing (PSP6075525) A.Y. 2019/20, University of Padua, Italy.

2018 — Member of the organizing committee of the International Winter School 2019, *Beyond $p < .05$: Modern statistical approaches in psychological science*, University of Padua, Italy.

2018 — Pre-graduate internship (4 months) at Medè SNC of Boscolo Casella Vassilaki, via Monte Lungo 3, Padova. Study of clinical cases concerning psychopathology in childhood and adolescence.

2016 — Pre-graduation internship (5 months) at the Department of Developmental Psychology and Socialization, University of Padua under the supervision of Professor Teresa Farroni. Study of indices of possession in childhood through visual preference. Data collection and analysis.

Publications

ARTICLES (PREPRINT)

Altoè G., Bertoldo G., **Zandonella Callegher C.**, Toffalini E., Calcagni A., Finos L. & Pastore M. (2019). Enhancing statistical inference in psychological research via prospective and retrospective design analysis. <https://arxiv.org/abs/1909.13773> (Submitted to *Frontiers in Psychology*)

Valori I., McKenna-Plumley P. E., Bayramova R., **Zandonella Callegher C.**, Altoè G., Farroni T. (2019). Proprioceptive Accuracy in Immersive Virtual Reality: A Developmental Perspective. <https://doi.org/10.1101/760553> (Submitted to *PLoS ONE*.)

ARTICLES (SUBMITTED)

Benavides-Varela S., **Zandonella Callegher C.**, Fagiolini B., Leo I., Altoè G., Lucangeli D. (2019). Effectiveness of digital tools designed for children with developmental dyscalculia and at risk for developing numerical deficits: A meta-analysis. (Submitted to *Computers & Education*)

POSTERS

Zandonella Callegher C., Toffalini E. & Altoè G. (2019). *Quantificare l'effetto di interesse* (trad. Quantify plausible effect size). I Psychometrics National Conference (4 October, 2019; Padua, Italy).

Zandonella Callegher C., Marci T. & Altoè G. (2019). *The role of mother and father attachment in children's socioemotional-adjustment: A Bayesian model comparison approach*. XIX European Conference on Developmental Psychology (Athens, Greece, 29 August-1 September 2019).

Zandonella Callegher C., Toffalini E. & Altoè G. (2019). *Eliciting and formalizing experts' knowledge about effect sizes*. IV SIPS International Conference, Society for the Improvement of Psychological Science (7-9 July, 2019; Rotterdam, the Netherlands).

Zandonella Callegher C., Marci T. & Altoè G. (2018). *Relazioni tra attaccamento paterno e problemi emotivo-comportamentali nella media infanzia: un'analisi bayesiana* (transl. Relation between father attachment and socio-emotional problems in the middle childhood: a Bayesian approach). XXV AIP National Congress section of Developmental and Educational Psychology, Italian association of psychology (17-19 September 2019; Turin, Italy).

SOFTWARE

Zandonella Callegher C., Toffalini E., & Altoè G. (2019). *Eliciting Effect Size - Shiny App* (Version V1.0.0). Zenodo. <http://doi.org/10.5281/zenodo.2564852>

TALKS

Zandonella Callegher C., Toffalini E., & Altoè G. *Elicitazione e utilizzo del parere degli esperti* (transl. Elicitation and formalization of experts' knowledge). XXV AIP National Congress Experimental section, Italian association of psychology (18-20 September 2019; Milan, Italy).

Zandonella Callegher C. (2019). *Experts' Elicitation*. Psicostat seminar at the Department of Statistical Sciences, University of Bologna (7 May 2019; Bologna, Italy).

Zandonella Callegher C., Toffalini E., & Altoè G.. *Heights Elicitation*. International Winter School "Beyond $p < .05$: Modern statistical approaches in psychological science" (18-22 February 2019; Padova, Italy).

Scholarships and Prizes

2018 — Winner of a PhD scholarship in Psychological Sciences (XXIV cycle, 2018-2021), funded by the University of Padua, Italy (€ 15,343.28 yearly).

2018 — Winner of "Bando Mille e un lode 2017/2018" (€ 1,000), University of Padua, Italy.

2014 — Winner of "Erasmus+ School of Psychology" (€ 2,800), University of Padua, Italy. Host university University of Chester, UK.

2012 — Winner of "Concorso n.40 borse di studio, 2 borse aggiuntive e n.40 premi per l'iscrizione ai corsi di laurea in Matematica a.a. 2012-13" (€ 400), Istituto di Alta Matematica F. Severi (INdAM).

Competence

MATHEMATICS AND COMPUTER SCIENCE

Experience on data analysis according to the classic statistical method and the Bayesian approach. Advanced R user, Tidyverse, Shiny, STAN, R-markdown, LaTeX, Git.

LANGUAGE

Italian: mother tongue.

English: excellent listening and reading, good speaking and writing (C1).

German: basic listening and reading (A1).

Padova, 12 October 2019

SIGNATURE*



* In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document