

Institut de la Vision
Université Paris Sorbonne
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Adrien Chopin
Ph.D in Psychology

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- Strong background in quantitative life science, stats and programming
- 18 scientific publications, 2 ongoing patents, 21 conferences, 14 invited talks
- 22 collaborations, 28 supervised students, 269h of teaching
- Recipient of a Marie-Curie grant, co-leader on a 4-year industrial grant (ANR)
- Numerous diffusion activities and regular communications with news outlets

Research

Main expertise

Human perception, binocular vision, human learning

Current scientific interests

Perception, learning, binocular and 3D vision, child cognition and aging, amblyopia, stereoblindness, prediction of falls, fMRI, media, game and meditation effects on cognition, ambiguous perception

Scientific approaches

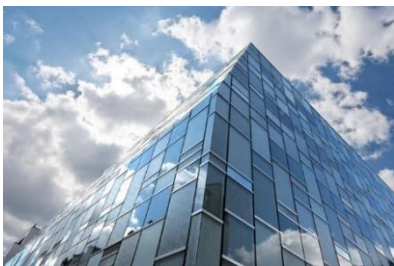
Psychophysics, brain imagery, pathology, development, remediation (gaming, perceptual learning), virtual reality, reviews and meta-analyses, computational models, robotics, psychometrics, kinematics

Academic positions

Université Paris Sorbonne (France)

Sep 2019 - now

Angelo Arleo's team, Institut de la Vision



Researcher under a 4-year academy/industry grant

Essilor, SNCF, Sorbonne University

- *Creating a machine-learning model to understand the cognitive causes of falls*
- *Created a new method to quickly estimate perception and two new stereotests. Led a team to test their psychometric properties.*
- *Applying the tests to a cohort of aging people to investigate aging in binocular vision.*
- *Designed and leading an experiment investigating the role of binocular vision in everyday life through kinematics.*
- *Analyzed collaborative data showing that at birth, we know when we are looked at, and that robots can be as good as live tutors at teaching to young children, ASD children and birds*
- *Led a review on the effects of screens on very young children*
- *Leading a meta-analysis on the efficiency of amblyopia treatment*

- *Leading a cross-sectional experiment on the effect of meditation*
- *Facilitated collaborative experiments on virtual reality or AMD*
- *2 ongoing patents, 3 publications, 5 conferences, 10 students, 4 talks*

Université de Genève
(Switzerland)

Oct 2017 – Aug 2019



Research and Teaching Fellow (Maitre-Assistant) at Daphne Bavelier's lab

- *Conducted a pre-registered RCT showing that action video games increase learning speed*
- *Conducted a meta-analysis showing that as little as 20h of gaming are causing visual gains*
- *Reviewed the literature on clinical stereotests and estimated a 7%-stereoblindness prevalence.*
- *Failed to show the importance of stereovision for driving using a real bike in a virtual reality environment*
- *Helped design a new cognitive training experiment*
- *3 publications, 7 conferences, 5 students, 4 talks*

University of California,
Berkeley (USA)

Jun 2016 – Sep 2017



Postdoctoral scholar under a NEI grant

- *Created a new experiment investigating binocular rivalry in amblyopia*
- *Failed to show the importance of stereovision for driving using a virtual reality HMD*
- *Reviewed the literature showing the effect of screens on children*
- *1 publication, 3 students, 2 talks*

École Normale Supérieure, Paris
(France)

CNRS, Paris (France)

Mar 2015 – Feb 2016



Postdoctoral scholar under an EU Marie Curie IOF grant
Pascal Mamassian's team

- *Created an experiment showing the existence of ways to cheat visual clinical tests and advocated for solutions*
- *Analyzed data showing speech audio-visual integration in newborns*
- *2 publications, 3 students, 2 talks*

University of California,
Berkeley (USA)

CNRS & Paris-Cité University
(France)

Mar 2014 – Feb 2015



Postdoctoral scholar under an EU Marie Curie IOF grant
Dennis Levi's and Michael Silver's teams

- *Designed an experiment showing transfer of learning in stereovision in amblyopia and recorded associated brain activity (pRF retinotopy and fMRI) but failed to show cortical plasticity*
- *Developed a modular and open-source pipeline for simplifying the use of advanced technics to analyze fMRI data (pRF)*
- *1 publication, 6 students, 1 talk*

Université de Genève
(Switzerland)

Dec 2012 - Aug 2013

Dec 2013 -

Jan 2014



UNIVERSITÉ DE GENÈVE

Postdoctoral scholar in Daphne Bavelier's lab

- *Built an experiment showing that the stereoscopic system computes relative disparities from absolute disparities and discovered dressmakers' high stereo-abilities, a result echoed by +58 news outlets*
- *2 publications, 1 conference*

University of Oxford,
Oxford (UK)

Sep – Nov 2012



Visiting scholar in Christopher Summerfield's lab

- *Built an experiment that failed to replicate predictive adaptation in face rivalry to apply the paradigm in fMRI*

**CNRS - Paris-Cité
University (France)**
Feb – June 2012



Postdoctoral scholar with Pascal Mamassian

- *Designed an experiment testing predictions of the predictive adaptation framework with mixed results*
- *1 publication, 2 conferences*

**Vanderbilt University, Nashville
(USA)**
Dec 2011 – Jan 2012
Sep - Dec 2010



Visiting Research Fellow in Randolph Blake's lab

- *Created and tested a computational model of human binocular rivalry (artificial neural network)*
- *Designed and tested an experiment showing that stereopsis and rivalry rely on illusory rather than real orientations in tilt illusions*
- *Designed and tested an experiment failing to show transfers of adaptation from a bistable stimulus to another, suggesting no common step*
- *1 publication, 1 conference*

**University of St. Andrews,
Scotland (UK)**
Aug 2007



Summer intern at Julie Harris's lab

- *Created and tested an experiment showing mysterious depth biases not explained by cyclovergence or horopter tilt*
- *1 publication, 1 conference*

Education

**Paris-Cité University, Paris
(France)**

CNRS, Paris (France)
2008-2012

Highest academic distinction:
*Très honorable avec les
félicitations du Jury à l'unanimité.*

**École Normale Supérieure,
Paris-Cité University,
EHESS, Paris (France)**
2006-2008

**Paris-Cité University, Paris
(France)**
2003-2006 Graduated magna cum
laude

**Paris-Cité University, Paris
(France)**
2002-2003

**Sorbonne University, Paris
(France) 2001-2002**

Ph.D. in Psychology in Pascal Mamassian's lab

Credited: Mar 28, 2012

- *Created the predictive adaptation framework to explain the results of two experiments that I conducted*
- *Conducted two experiments demonstrating implicit and probabilistic computations in human visual ambiguous perception*
- *3 publications, 4 conferences, 1 talk, 1 student*

Master (equivalent to M.S.) in Cognitive Sciences, called Cogmaster
Conducted an experiment investigating dynamics of human binocular rivalry

Ranked #1, summa cum laude

Licence (equivalent to B.S.) in Psychology

The French degree involves a detailed knowledge of clinical psychopathologies.

Non-degree medical studies

Non-degree preparation school to medical studies

Publications in international peer-reviewed journals

[2y-IF is the Impact Factor at 2 years]

1. Guellai, B., Somogyi, E., Esseily, R., & **Chopin, A.** (2022). Effects of screen exposure on young children's cognitive development: A review. *Frontiers in Psychology*, 13 [2y-IF 2020: 4.2]

2. Araguas, A., Guellaï, B., Gauthier, P., Richer, F., Montone, G., **Chopin, A.**, & Derégnaucourt, S. (2022). Design of a robotic zebra finch for experimental studies on developmental song learning. *Journal of Experimental Biology*, 225(3), jeb242949. <https://doi.org/10.1242/jeb.242949> [2y-IF 2020: 3.3]
3. Zhang, R.-Y.*, **Chopin, A.***, Shibata, K., Lu, Z.-L., Jaeggi, S. M., Buschkuhl, M., ... Bavelier, D. (2021). Action video game play facilitates “learning to learn.” *Communications Biology*, 4(1), 1154. <https://doi.org/10.1038/s42003-021-02652-7> [2y-IF 2021: 6.5] * **equal contribution**
4. **Chopin, A.**, Silver, M.A., Sheynin, Y., Ding, J. & Levi, D.M. (2021) Transfer of perceptual learning from local stereopsis to global stereopsis in adults with amblyopia: a preliminary study. *Frontiers in Neuroscience* 15:1244. Doi: 10.3389/fnins.2021.719120 [2y-IF 2021: 5.1]
5. Guellaï, B., Hausberger, M., **Chopin, A.**, & Streri, A. (2020). Premises of social cognition: Newborns are sensitive to a direct versus a faraway gaze. *Scientific Reports*, 10(1), 9796. [2y-IF 2021 : 5]
6. **Chopin, A.**, Bediou, B. & Bavelier, D. (2019). Altering perception: the case of action video gaming. *Curr. Opin. Psychol.* **29**, 168–173. [2y-IF 2021: 6.8]
7. **Chopin, A.**, Chan, S.W., Guellaï, B., Bavelier, D., & Levi, D.M. (2019). Binocular non-stereoscopic cues can deceive clinical tests of stereopsis. *Scientific Reports*. **9**, 5789. [2y-IF 2021 : 5]
8. **Chopin, A.**, Bavelier, D., & Levi, D.M. (2019). The prevalence and diagnosis of ‘stereoblindness’ in adults less than 60 years of age: a best evidence synthesis. *Ophthalmic and Physiological Optics*, 39(2), 66–85. <https://doi.org/10.1111/opo.12607> [2y-IF 2021: 4 – OPO’s top read 2018-2019]
9. **Chopin, A.**, Levi, D.M., Knill, D., & Bavelier, D. (2017) Dressmakers show enhanced stereoscopic vision. *Scientific Reports*. 7:3435. Doi: 10.1038/s41598-017-03425-1 [2y-IF 2021 : 5 – Altmetrics 2020: 512 – 779th/270,660 of all articles of same age]
10. **Chopin, A.**, Levi, D.M., Knill, D., & Bavelier, D. (2016). The absolute disparity anomaly and the mechanism of relative disparities. *Journal of Vision*, 16(8), 2. [2y-IF 2021: 2.2]
11. Guellaï, B., Streri, A., **Chopin, A.**, Rider, D., & Kitamura, C. (2016). Newborns’ Sensitivity to the Visual Aspects of Infant-Directed Speech: Evidence From Point-Line Displays of Talking Faces. *Journal of Experimental Psychology: Human Perception and Performance*. DOI: 10.1037/xhp0000208 [2y-IF 2020: 3.3]
12. **Chopin, A.**, Mamassian, P. (2013) Response: Genuine long-term positive aftereffects. *Current Biology*, 23(10): R439. [2y-IF 2021: 10.8]
13. **Chopin, A.**, Mamassian, P., & Blake, R. (2012). Stereopsis and rivalry are based on perceived rather than physical orientations. *Vision Research*, 63: 63-68. [5y-IF 2020: 2.5]
14. Harris, J.M., **Chopin, A.**, Zeiner, K.M., & Hibbard, P.B. (2012). Perception of relative depth interval: systematic biases in perceived depth. *The Quarterly Journal of Experimental Psychology*, 65(1), 73-91. doi:10.1080/17470218.2011.589520. [2y IF 2020: 2.1]
15. **Chopin, A.**, & Mamassian, P. (2012). Predictive properties of adaptation. *Current Biology*, 22(7): 622-626. doi:10.1016/j.cub.2012.02.021. [2y-IF 2021: 10.8]
16. **Chopin, A.**, & Mamassian, P. (2011). Usefulness Influences Visual Appearance in Motion Transparency Depth Rivalry. *Journal of Vision*, 11(7). doi:10.1167/11.7.18. [2y-IF 2020: 2.2]
17. **Chopin, A.**, & Mamassian, P. (2010). Task usefulness affects perception of rivalrous images. *Psychological Science*, 21(12): 1886-93. [2y-IF 2021: 7.3]

Publications in national peer-reviewed journals

1. Esseily, R., Guellaï, B., **Chopin, A.**, Somogyi, E. (2017) L’écran est-il bon ou mauvais pour le jeune enfant? *Spirale*, 3(83): 28-40. doi: 10.3917/spi.083.0028

Proceedings and conferences (posters, symposia and talks)

1. Denkinger, Antoniou, Tarello, Levi, Backus, Bavelier & **Chopin**. New Measures of Stereoscopic Vision: Assessing Reliability and Validity. [ECVP 2022]
2. **Chopin***, Zhang*, Shibata, Lu, Jaeggi, Buschkuhl, Green & Bavelier. Increasing learning speed with action video gaming: “Learning to learn” as a new path for generalization of learning. [Symposium at ESCOP 2022]
3. **Chopin**, A. Adaptive methods to quickly estimate psychometric functions: the case of Psi-marg-grid and the effect of non-monotony. [VSS 2022]
4. Shibata, K., **Chopin**, A., Zhang, R.Y., Lu, Z., Jaeggi, S., Buschkuhl, M., Green, C.S., & Bavelier, D. Facilitating cognitive and perceptual learning through action video game play [FENS 2020]
5. Zhang, **Chopin**, Shibata, Lu, Jaeggi, Buschkuhl, ... & Bavelier (2020). “Learning to learn” as a new path for learning generalization in working memory: the case of action video game play. *Journal of Vision*, 20(11), 1697-1697. [VSS 2020]
6. Pichon, S., Joessel, A., **Chopin**, A., Bavelier, B. A serious games for targeting cognitive problems in anxiety [Symposium at the European Congress of Psychiatry 2020]
7. Pichon, S., Provost, A., Bourdon, V., Fall, A., Cerri, T., Cavalli, G., **Chopin**, A., Nguyen, A., Geslin, E., Bavelier, D. (2019) Combining attention bias modification training with attentional control training [ACBM Conference Berlin 2019].
8. **Chopin**, A., Bavelier, D., & Levi, D. M. (2019). The prevalence and diagnosis of “stereoblindness”: A best evidence synthesis. *Journal of Vision*, 19(10), 262b-262b. [VSS 2019]
9. Denkinger, S., Levi, D.M., Backus, B., **Chopin**, A., & Bavelier, D. (2019). New Measures of Stereoscopic Vision. [Master’s day conference, Geneva 2019].
10. Chopin, A., & Arleo, A. (2019) Stereo-deficiencies in older adults: measures, impact and remediation. [10 years of fighting blindness, Jussieu, Paris 2019].
11. Shibata, K., **Chopin**, A., Zhang, R. & Bavelier, D. Learning to Learn: A generalised route to learning. [Campus Biotech, Geneva 2018]
12. Shibata K., **Chopin** A., Zhang R., Todeschini J., Martins M., Poma P., Denkinger S., Lu Z.L., Jaeggi S., Buschkuhl M., Green C.S. & Bavelier D. Method to study learning generalisation through training [Master’s day conference, Geneva 2018].
13. McDermott, K.C., **Chopin**, A., Ptukha, A., & Mamassian, P. (2015). History effects in perception after manipulating the statistics of the environment. *Journal of Vision*, 1;15(12):392. doi: 10.1167/15.12.392. [VSS 2015]
14. **Chopin**, A., Knill, D.C., Levi, D.M., & Bavelier, D. (2014). Stereoscopic depth from absolute and relative disparities. *Journal of Vision*, 14 (10), 969. doi:10.1167/14.10.969 [VSS 2014]
15. Mamassian, P., & **Chopin**, A. (2012) Long-term recalibration of orientation perception. *Perception*, 41, supplement: 42. [ECVP 2012]
16. **Chopin**, A., Mamassian, P., & Blake, R., (2011). Transition between stereopsis and binocular rivalry is based on perceived, rather than physical, orientation. *Journal of Vision*, 11(11):301. [VSS 2011]
17. **Chopin**, A., Capps, M., & Mamassian, P. (2010). Expectation from temporal sequences influences binocular rivalry [Abstract]. *Journal of Vision*, 10(7):347. [VSS 2010]
18. **Chopin**, A., Mamassian, P. (2010) *L’utilité d’un percept influence la bistabilité dans la transparence de mouvement*. Talk at the Annual meeting of the doctoral school 261, Paris (France).
19. **Chopin**, A., Mamassian, P. (2009) *Percept usefulness influences bistability in motion transparency*. Talk at the Annual national meeting of the French research in vision (GDR Vision), Toulouse (France).

20. **Chopin, A.**, & Mamassian, P. (2009). Task demands can affect binocular rivalry dynamics [Abstract]. *Journal of Vision*, 9(8):299, 299a. [VSS 2009]
21. Harris, J., **Chopin, A.**, & Zeiner, K. (2008). Individual differences in depth perception: are biases correlated with eye position? *Journal of Vision*, 8(6):93, 93a. [VSS 2008]

Invited academic talks

1. 2022 – Talk invited by Jean-Louis de Bougrenet de la Tocnaye (IMT Atlantique, Brest, France) – *New technologies for learning*
2. 2022 – Talk invited by Daphné Bavelier (University of Geneva, 3-days workshop at Château-d’Oex)
3. 2021 – Invited talk at the Smith Kettlewell Eye Research Institute (San Francisco). *New developments in measuring stereoscopic vision.*
4. 2020 – Talk invited by Michel Paques - Centre d'investigation clinique - Hôpital des 15-20 (Paris). *How to measure stereoscopic vision and why?*
5. 2019 – Geneva Amblyopia Meeting (Geneva). *How to measure stereoblindness and stereovision accurately in rehabilitation protocols?*
6. 2017 - Talk invited by Angelo Arleo – Institut de la Vision (Paris). *Bringing completely stereoblind amblyopic patients to stereo-recovery.*
7. 2017 - Talk invited by Austin Roorda – Oxyopia Seminar, School of Optometry, UC Berkeley (CA). *Bringing completely stereoblind amblyopes to stereo-recovery.*
8. 2017 - Talk invited by Zoe Kourtzy & John Mollon – Rank Prize Funds Symposium on Learning to See: From Retinal to Brain Computation – Grasmere (UK). *Recovery of stereopsis in completely stereoblind amblyopes.*
9. 2016 - Talk invited by Mark Wexler – LPP, Paris (France). *The mechanism of relative disparity.*
10. 2016 - Talk invited by Carole Peyrin – LPNC, Grenoble (France). *The mechanism of relative disparity.*
11. 2015 – Talk invited by Guillaume Masson / Frederic Chavanne – INT, Marseille (France). *The absolute disparity anomaly and the mechanism of relative disparities.*
12. 2015 – Talk invited by Simon Thorpe / Yves Trotter – Cerco, Toulouse (France). *The absolute disparity anomaly and the mechanism of relative disparities.*
13. 2015 – Talk invited by Martin Banks, University of California, Berkeley (USA). *Absolute and relative disparities.*
14. 2008 – Talk invited by Daniel Pressnitzer, National workshop on perceptual bistability, Paris, Ecole Normale Supérieure (France). *Expected utility in binocular rivalry.*

Patents

2022: 2 ongoing patents with Essilor

Grants, awards and competitions

- 2019-2023: co-leader of a research axis in an industrial grant (leader: Angelo Arleo) with Sorbonne University, Essilor and SNCF (ANR Silversight II)
- 2018: grant from the FNS, Switzerland (\$12,800)
- 2013-2015: EU Marie-Curie grant (IOF – Career development) for two-year funding at the University of California, Berkeley (USA) and Ecole Normale Supérieure (Paris, France), ~\$206,000.
- 2012-2026: qualified to the functions of associate professor in Psychology (qualification 2012-2016), Neurosciences (qualification 2016-2020) and Psychology (qualification 2022-2026).
- 2012: Doctoral award, awarded once a year for the best Ph.D thesis in the Cognitive Science, Psychology, Neurosciences and Computer Science fields of the Paris-Cité University.
- 2008-2011: Ph.D grant from the French Research Ministry (3-year funding – ~\$153,000)

2008-2011: Teaching grant from Paris-Cité University (3 years – ~\$30,000)

2010: Travel & exchange grant from Paris-Cité University. Travelled to Randolph Blake's Lab, Vanderbilt University, Nashville, USA for three months of research on binocular rivalry.

Collaborations

Active academic collaboration groups (Ph.D students and researchers – 10 groups)

1. Evolution of stereopsis in older adults
Angelo Arleo, INSERM, Paris (France)
2. Effects of stereovision in kinematics of everyday life tasks
Catherine Agathos, Smith-Kettlewell Institute, San Francisco (USA)
Angelo Arleo, INSERM, Paris (France)
Vito Monaco, Sant'Anna School of Advanced Studies, Pisa (Italy)
Valérie Parmentier, Essilor, Paris (France)
3. Efficiency of robot teacher in birds, neurotypical and autistic (ASD) children
Alice Araguas, Université Paris Ouest Nanterre La Défense, Nanterre (France)
Bahia Guellai, Université Paris Ouest Nanterre La Défense, Nanterre (France)
Sébastien Derégnaucourt, Université Paris Nord - Paris 13 (France)
4. Amblyopic rivalry
Claudia Lunghi, Ecole Normale Supérieure, Paris (France)
Concetta Morrone, Pisa University, Pisa (Italy)
Dennis Levi, University of California, Berkeley (USA)
5. Gaming for decreasing anxiety and increasing attention
Naïma Gradi, Université de Genève (Switzerland)
Swann Pichon, Geneva School of Health Sciences (Switzerland)
Daphné Bavelier, Université de Genève (Switzerland)
6. Determining the predictors of falls in older adults
Denis Sheynikhovich, Sorbonne Université, Paris (France)
Angelo Arleo, INSERM, Paris (France)
7. Effect of meditation on learning speed
Lia Antico, Université de Genève (Switzerland)
Daphné Bavelier, Université de Genève (Switzerland)
8. Hyperacuity to diagnose early DMLA
Josselin Gautier, INSERM, Paris (France)
Michel Paques, Hôpital des 15-20, Paris (France)
Angelo Arleo, INSERM, Paris (France)
9. Effects of screens on children's cognition
Rana Esseily, Université Paris Ouest Nanterre La Défense, Nanterre (France)
Bahia Guellai, Université Paris Ouest Nanterre La Défense, Nanterre (France)
Eszter Somogyi, University of Portsmouth, Portsmouth (UK)
10. Test-retest and validity of stereoscopic measures
Ben Backus, SUNY, Vivid Vision, NY/CA (USA)
Vivid Vision (company, USA)
Daphné Bavelier, Université de Genève (Switzerland)

Former collaborations (12 groups):

Ru-Yuan Zhang, Shanghai Jiao Tong University, Shanghai (China)
Kengo Shibata, Oxford University (UK)
Zhong-Lin Lu, NYU Shanghai (China)

Susanne Jaeggi, University of California, Irvine, CA (USA)
 Martin Buschkuehl, MIND Research Institute, CA (USA)
 Shawn Green, University of Wisconsin-Madison, WI (USA)
 Anna-Flavia Di Natale, Università degli studi di Milano-Bicocca, Milano (Italy)
 Emmanuela Bricolo, Università degli studi di Milano-Bicocca, Milano (Italy)
 Benoit Bediou, Université de Genève (Switzerland)
 Michael Silver, University of California, Berkeley (USA)
 Jian Ding, University of California, Berkeley (USA)
 Eunice Yang, University of California, Berkeley (USA)
 Justin Theiss, University of California, Berkeley (USA)
 Jacob Sheynin, McGill University, Montreal (Canada)
 Kyle McDermott, University of California, Davis (USA)
 Pascal Mamassian, ENS & CNRS (France)
 Arlette Streri, Paris-Cité University, Paris (France)
 David Knill, University of Rochester (USA)
 Randolph Blake, Vanderbilt University (TN, USA)
 Jan Brascamp, Utrecht University (the Netherlands)
 Christopher Summerfield, University of Oxford (UK)
 Raymond van Ee, Utrecht University (the Netherlands)
 Julie Harris, University of St. Andrews (UK)
 Paul Hibbard, University of St. Andrews (UK)
 Katharina Zeiner, Stuttgart Media University (Germany)

Teaching

Year	UE	Location	Type	Hours	Audience
2021	Physiological Optics	d	CM	7	Master students & Opticians B.S. students
	Cognitive Sciences	c	TD	12	
2020	Physiological Optics	d	CM	3.5	Master students & Opticians Master 1 Ergonomics B.S. students
	Neuro-ergonomics	c	TD	9	
	Cognitive Sciences	c	TD	12	
2019	Neurosciences	c	TD	6	Master 1 Ergonomics Teachers
	Continuing education	b	TD	6	
2011	Differential Psychology	a	TD	26	B.S. students
	Experimental Psychology	a	TD	52	
2010	Experimental Psychology	a	TD	52	B.S. students
	Experimental Psychology	a	TD	52	
2009	Experimental Psychology	a	TD	52	B.S. students
	Differential Psychology	a	TD	26	

Locations

Total TD-equivalent: 269h

a – Paris-Cité University, Institut de Psychologie, Boulogne

b - Département de l'Instruction Publique, Service Ecran-Media, Switzerland

c – Paris-Cité University, Faculté des Sciences Fondamentales et Biomédicales, Paris

d – Université Paris Saclay, Orsay

Types CM = Lecture (in amphitheatre) – TD = Seminar (in class)

Full list

2020 and 2021 – 3x3.5h – initial optometry formation and optician continuous education - Master Ingénierie de la Santé, parcours Sciences de la Vision, UE Optique physiologique, *Cognition visuelle*, Location d

2020 and 2021 – 2x12h – Licence 2 Biomédicale et Bi-Licence 2, *Sciences Cognitives 1*, SA04M070, Location c

2020 – 9h - Master STS, Mention Ergonomie, *Introduction à la neuroergonomie*, and *Introduction to Neurosciences*, EROBM080, Location c

2019 – 6h – Master STS, Mention Ergonomie, *Introduction to Neurosciences*, "Perception-Attention" and "Memory-Langage", Location c

2019 – 6h – continuing education for teachers, *The effect of screens on intellectual development*, Location b

2008-2011 – 208h - Licence 1 de Sciences de la Santé, mention Psychologie, teaching assistant ("Monitorat" at CIES Paris Sorbonne), Location a

Mentoring and interns: mentored 1 Ph.D. student (co-tutoring), 14 graduate students (direct supervision, including a successful honor thesis) and 11 undergraduate students.

Qualification for the French position *Maître de Conférence* (associate professor): 16th section (2012-2016: Psychology) and 69th section (2016-2020: Neurosciences)

Service

2019-06: co-organized the 2019 Geneva Amblyopia Meeting, an international 2-days workshop gathering the leaders of visual interventions in amblyopia, with a grant from the Swiss FNS.

2018-2019: co-organized the 2019 Festival of Education of Switzerland, in Geneva (<https://printemps-education.ch/festival-education/>)

2015-2017: created an fMRI-analysis pipeline (Pipeline_JAS) - a set of matlab automated modules for pre-processing, segmentation of fMRI data in mrVista/Freesurfer/FSL, pRF retinotopy and visualization. Shared on Github (https://github.com/Stereo-Boy/Pipeline_AS) and wrote an extensive wiki documentation for it.

2014-2016: organized the lab system for enrolling and screening amblyopic patients with the eye clinic.

2010 – 2011: elected member at the doctoral school's academic board (Paris-Cité University)

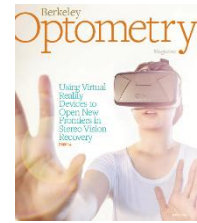
2010: organized weekly lab seminars

2007-2008: founded a student seminar in the Cogmaster

Reviewing: peer-reviewing for the following scientific journals: Optometry and Vision Science, Plos Computational Biology, Plos One, Current Biology, iPerception, Journal of International medical research, Scientific Reports, Journal of Vision, Vision Research, Annals of translational medicine, Frontiers in Human Neuroscience, Perception, The International Journal for the Psychology of Religion

Media presence & General public dissemination





Dec 2021: interview for *Marianne* (French weekly magazine, 350k readers/month) about the effect of digital technology on cognitive abilities and brain development

Oct 2021: cover of our work on action video games on the Swiss radio (RTS, la 1ere, CQFD

<https://tinyurl.com/videogameslearning>)

Oct 2021: Invited talk at a projection of the documentary “Le Cerveau des Enfants” about how we can use neuroscience to help children learn (non-profit *Ensemble Grandir Avec Nos Enfants*)

May 2021: webinar for Adios-Corona:

<https://www.youtube.com/watch?v=EuTkDVoFIEE&feature=youtu.be>

Nov 2020: intervention on Belgian TV channel RTL-TVI (weekly news “c’est pas tous les jours Dimanche”) about the reuse of surgical masks during the COVID-19 pandemic (for Adios Corona)

<https://tinyurl.com/chirmaskreuse>

Oct 2020: Press conference and interviews with [l’Express](#), [le Monde](#), [le Canard Enchaîné](#), [Que Choisir](#), and [France Inter](#) about the reuse of surgical masks during the COVID-19 pandemic (for Adios Corona).

Dec 2018: Interviewed for “Ca m’intéresse” (French monthly magazine 200k readers/month).

Sept 2018: Interviewed for Libradio, broadcasted on Frequence Banane (local Swiss-French radio).

June 2018: [Blog article at Ecole & Bien-être](#) about an earlier preview showings talk

May 29 2018 and June 6: Invited talks at preview showings of the documentary “Le Cerveau des Enfants” about how we can use neuroscience discoveries to help children learn and grow cognitive skills (*Cinelux, Geneva*) – broad audience.

June 2017: Our study about dressmaker’s enhanced stereovision received world coverage. Interviewed for radio news: BBC ([World Service Healthcheck](#) – 260M listeners/month), [CBS \(Science Today](#) – 260M listeners/month), KBCS, NPR ([Health Shots](#) – 84M listeners/month), BYU ([Top of the Mind with Julie Rose](#)), and the AOP ([Optometry Today](#)), or [Inside Science](#). From Altmetrics, >58 news outlets reported our study.

Jan 2017: Interviewed for PC Gamer (22k readers a month) about visual perception in video games. *How many frames per second can the human eye really see? Alex Wiltshire*

October 2016: Interviewed for the *Berkeley Optometry Magazine* about the efficiency of stereopsis recovery and one of my recovered patient. *Discovering the World's Depth Later in Life. Gordy Slack*

May 2016: published two articles about open-access for the biology website BiteSize Bio (200k readers a month). *How to Access All Science for Free? / Five Truths About Science Publishing or Why All Science Should be Free. Adrien Chopin*

Apr 2016: published an article on the cognitive impact of TV and screens on very young children, including the mechanism, for Coginnov (non-profit), illustrated by Fiamma Luzzati. *Les écrans en quelques maux. Adrien Chopin, Bahia Guellai and Nawal Abboub.*

Mar 2016: Interviewed for the French magazine "*La Recherche*" (65k readers a month), on stereoscopic vision in insects and the reason why it tells us something interesting. *La mante religieuse, nouveau modèle d'étude de la vision 3D? Laurence Dennis.*

Sep 2013: Interviewed for the Swiss radio (RTS, la 1ere, CQFD) on treating amblyopia and stereoblindness with dichoptic action video games. *Les bienfaits des jeux vidéo pour la santé.*
<https://tinyurl.com/amblyopiagames>

Mar-May 2011: Consulting for a diffusion project about Cognitive Sciences targeted to elementary school with the organization "la Main à la Pâte" (coordination: Elena Pasquinelli) about the impact of screens on children cognition

Mar 2009-2010-2011: Co-organized a scientific exhibition (surface 50m²), on 3 consecutive years, hosted at the French Forum of Cognitive Sciences, Paris, about face perception, self-perception, neuro-imagery, change blindness, split-brain and language development. The framework was a DCST project that we wrote (financed by the CIES Sorbonne, Jussieu, Nanterre and Créteil), named "Les Sciences Cognitives Expliquées".

Feb 2010: Series of speeches and demos for the non-profit organization "Science Académie" about Brain, Philosophy and Damages, to a public of high-school students in Paris. "Poverty of vision revealed by change blindness and inattentive blindness".

Nov 2008: Co-organized a full-day exhibition at the Paris Science Festival for the RISC and Cognivence (about bistability).

Apr 2008: Co-organized the 7th French Forum of Cognitive Sciences in Paris.

Nov 2007: Series of speeches and demos on a full day for the 16th national Science Festival in Paris, to a broad audience public. "What does perceptual bistability teach us?"

May 2007 and 2006: Series of demos on a full day for the 5th and the 6th French Forum of Cognitive Sciences in Paris to a broad audience public. "What do illusions tell us?"

2007-2010: Elected member of the board of non-profit Cognivence (Association of the Students in Cognitive Sciences from Ile de France) whose goal is to spread awareness about cognitive sciences.

Professional skills

Quantitative Science Psychophysics, brain imagery, quantitative and computational models, meta-analyses, kinematics, experimental designs and RCT, psychometrics

Statistics parametric or not, frequentist or Bayesian, GLM/GLME, hierarchical models, Matlab/R/SPM.

Programming *Proficient:* MATLAB, PsychToolBox; *Intermediate:* R, Python, PsychoPy, Stan

Data science machine learning (classifications, support-vector machine, random forest), cross-validation, MRI analysis (pRF & MVPA decoding), factor analysis/PCA, clustering, bootstrapping, feature selection, data imputation (MICE, k-nearest neighbors), artificial neural networks (ANFIS, denoising auto-encoders), HPO

Modeling neural models (Runge-Kutta), probabilistic behaviors, optical models (Zernike polynomials)

Data wrangling, data visualization (*intermediate*)

Web design HTML/CSS, Javascript, CMS, PHP/SQL (*basics*) OS Mac, Windows

MRI data analysis: machine learning (MVPA), pRF/retinotopy (mrVista, FSL, Freesurfer), statistics (SPM).

Experience with clinical patients: amblyopia treatment, optometry (*basics*), ethics, data protection, recruitment

Languages: French (*native*), English (*fluent*), German (*basics*)

Lab managing: project managing of medium-size teams, lab management, collaborative tools (*advanced*)

Teamwork 22 collaborations (11 active), 27 students/interns, [Github](#), open-access/open-source

Technical apparatus: MRI scanning (operating a 3T Siemens Trio scanner), stereo-optical devices and clinical stereotests, eye-tracking systems (Eyelink II, Arrington VisualSystem, Viewpoint), full-body motion tracking (Optitrack), photometers, autorefractors, immersive environments (virtual reality sets with hand and bike controller), acuity tests, visual field perimeters

Communication Invited talks & webinars (18), conferences (20), various interviews (20) for TV (RTL-TVI), radio (e.g. BBC, CBS, KBCS, NPR, BYU, RTS) and newspapers (e.g. PC gamer, La Recherche).

Teaching 269 hours at all university levels and continuing education (science, visual neuroscience)

Writing Publications in academic journals (18), grants (6)

Certified trainings and Ethics

First Aid: Workplace first-Aider Certification (Sauveteur Secouriste du Travail - 2022)

MRI: Safety training course and standard operating procedures (2014-2017) and user training course (2015-2017) - Li Ka Shing Brain Imaging Center (UCB, USA).

Ethics: Sexual Violence and Sexual Harassment Prevention Training for Staff – score 100% (UCB e-course 2015, 2017), Ethical Values and Conduct (UCB e-course 2015), Conflict of Interest for Researchers Briefing (COIR UCB e-course 2017), Cyber Security Awareness (UCB e-course 2015, 2017), Group 1 Biomedical research investigators and key personnel (CITI program 2014)

References upon request

Personal commitment & Activism

I am strongly committed and active in the following causes:

- ❖ Open access to science, as provider of a [webpage referencing servers](#) allowing universal access to science: (*total 545,000 visits*)
- ❖ Knowledge spread and fact-checking, through the creation of the Coronavirus Fact-Checking Taskforce (a [collaborative scientific database about COVID-19](#) and its [discussion group](#)), and as one of the main content editor at [adioscorona.org](#). **Adios Corona** is a website providing scientific recommendations related to COVID-19, translated in 10 languages (*total >1M visits*), whose information is also spread through Santé.fr (official French information channel for COVID).
- ❖ Impact investing, with the [Best-impact stock investing list 2021](#)
- ❖ Environment protection and effective altruism, as founder of [Verts-Luisants](#) – a website promoting effective altruism, environment protection and zero waste, and as a taker of the GWWC pledge.
- ❖ Zero-waste, as creator of the [FB Zero-Waste challenge](#) (2018-2020)
- ❖ Efficient education, as former website manager for [Le Printemps de l'Éducation – Suisse](#) (2018-2019) - a Swiss non-profit for promoting innovative, alternative or efficient education, and co-organizer of the 2019 Festival de l'Éducation.

Cognitive skills

Cognitive skills are measured in-lab in 2021 with the test indicated in the right column (e.g. VTS: Vienna Test System), and standardized against the general or same-age population.

Visuo-spatial working memory	● ● ● ● ●	100 th percentile	Corsi cubes
Updating of working memory	● ● ● ● ●	100 th percentile	Dual n-back
Mental flexibility	● ● ● ● ●	100 th percentile	TMT
Attentional control	● ● ● ● ●	99 th percentile	MOT test
Updating of visuo-spatial memory	● ● ● ● ●	99 th percentile	N-back
Learning (visual content)	● ● ● ● ●	98 th percentile	FGT
Mental inhibition	● ● ● ● ●	97 th percentile	VTS INHIB test
Visuo-spatial short-term memory	● ● ● ● ●	88 th percentile	Corsi cubes
Mental rotations / 3D transformations	● ● ● ● ●	86 th percentile	VTS 3D test
Mental processing speed	● ● ● ● ●	85 th percentile	TMT
Visual acuity	● ● ● ● ○	68 th percentile	ETDRS test
Auditive acuity	● ● ● ○ ○	51 th percentile	Audiogram
Reflexive reaction time	● ● ○ ○ ○	29 th percentile	VTS INHIB test

Other interests

Hiking, running, piano improvisation and best-impact investing