Full CV. last update: 5/8/2025

Virginie van Wassenhove

She/her • French, single, no children • DoB: Feb. 26th 1976 • FR, EN

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Appointments

2024- **Senior Fellow**, CEA, DRF/Inst. Joliot, NeuroSpin, France.
2022- **Research Director**, CEA, DRF/Inst. Joliot, NeuroSpin, France.
2012- **Cognition & Brain Dynamics leader**, INSERM Cognitive Neuroimaging Unit, France.
2018-23 International Expert Senior, CEA, NeuroSpin, France.
2013-18 Expert Senior, CEA, NeuroSpin, France.
2008-17 Executive Director, NeuroSpin MEG, CEA, NeuroSpin, France.
2008-12 Associate Researcher, INSERM U992, France.

Education & Training

2013 **HDR**, Habilitation à Diriger des Recherches, UPMC (Paris VI), France.
2005-08 Post-Doctoral Research Scholar, CALTECH, USA.
2005-06 Post-Doctoral Research Scholar, UCLA, USA.
2004-05 Post-Doctoral Research Scholar, UCSF, USA.
2024 **PhD** in Neurosciences & Cognitive Sciences [Aug. 20th 2024] UMCP, College Park, USA.
1998 **B.Sc.** [Dec. 20th 1998] University of Maryland College Park, College Park, USA.

Scientific Expertise

I review grant proposals for major national and international foundations (ERC, NW0, DFG, ANR, NSF, NSERC, Humboldt…). I am an *ad-hoc* reviewer for numerous international journals (Science, Sci Adv, Nat Comm, PNAS, Cereb Cortex, J Neurosci, J Neurophys, TiCS, Curr Biol, …). I served on the editorial board at eLife (2020-23). I am an Associate Editor for the Journal of Cognitive Neuroscience (2020-).

Grants and Community Fundraising

I have been awarded ~ 6 M€ in 15 years of independent research. As P.I. (ERC SyG Chronology 2.5 M€; StG MindTime 1.5 M€; ANR JCJC BrainTime 400 k€), leading P.I. in collaborative projects (ANR PRCE Wildtimes 611 k€; IDEX NeuroSaclay 75 k€) and co-P.I., European FET (Experience 750 k€) and ANR PRC (Autotime 200 k€; Multifracs 350 k€). I co-direct C-Brains , a community grant (~12 M€) to strengthen the neuroscience and cognitive science of the Parisian region, France.

Mentoring & Academia

I have mentored 12 postdoctoral fellows, 16 PhD students (8 as mentor and director; 3 as co-dir; 5 as advisor), more than 30 master students. I contributed to 5 Habilitation, 20 PhD juries, and 10 PhD advisory boards. I contributed to summer schools and lectures over the years and revamped revamped the Advanced Cognitive Neurosciences Graduate course (2011-17, ENS Cogmaster, Paris).

Scientific discoveries and 10 recent key publications [Google Scholar]

I contributed >70 articles in international peer-reviewed journals (incl. 1 Nat Comm, 1 Nat Hum Behav, 1 Psyc Sci, 3 PNAS, 5 J Neurosci, 1 J Neurophys, 6 J Cogn Neurosci).

Non-clocking roles of neural oscillations in timing

(1) Azizi, L., Polti, I., & van Wassenhove, V. (2023). *J. Neurosci.*, 43(43), 7186-7197.
Alpha brain rhythms (~10 Hz) are canonical markers of states of consciousness. We show using MEG that the relative bursting time of alpha activity predicts an individual's retrospective estimation of how much time has just elapsed. Remarkably, this relationship only holds true when the individual does not attend to time and vanishes when attending to it. We propose that alpha bursts temporally track the states of awareness in episodic memory, from which future recollections of elapsed time will be inferred.

(2) Kononowicz, T. W., Roger, C., & van Wassenhove, V. (2019). *Cerebral Cortex,* 29(10), 4366-4380.

(3) Grabot, L., Kononowicz, T. W., La Tour, T. D., Gramfort, A., Doyère, V., & van Wassenhove, V. (2019). *J. Neurosci.*, 39(17), 3277-3291.
This series of MEG work shows that (1) beta oscillations transiently inhibits activity setting a relaxation time at the onset of the production of a time interval (temporal accuracy); (2) the distances between beta neural trajectories can serve as read-out for conscious timing (temporal metacognition); (3) the coupling strength between alpha and beta oscillations informs on an individual's temporal precision (not accuracy).

Temporal coincidence (simultaneity *vs.* order) in multisensory integration

(1) Pesnot Lerousseau, J., Parise, C. V., Ernst, M. O., & van Wassenhove, V. (2022). *Nature Communications*, 13(1), 2489.
The study suggests the existence of multisensory correlation detectors in the human brain, explaining how and why the temporal correlation of multisensory signals can contribute to multisensory causal inference.

(2) Grabot, L., & van Wassenhove, V. (2017). *Psychological Science*, 28(5), 670-678.
We show the existence of stable inter-individual differences in temporal order judgments suggesting that individuals require different temporal delays between sensory events to perceive them as being simultaneous. While attention can partially compensate for these physical delays, it cannot eradicate them. Our results demonstrate individual idiosyncrasies in the perception of simultaneity and spatial coincidence.

(3) Chalas, N., Omigie, D., Poeppel, D., & van Wassenhove, V. (2023). *Iscience*, 26(3).
Desynchronized audiovisual speech organizes cortical dynamics into a bipartite network, i.e. a network of brain areas that synchronize, hierarchically, at different time scales. We show that speech-specific temporal statistics are processed at the highest hierarchical level, while low-level sensory delays engage the sensorimotor system. Our results predict the existence of priors relative to AV speech delays in an internal speech model.

Mental timelines

(1) Gauthier, B., Pestke, K., & van Wassenhove, V. (2019). *Cerebral Cortex*, 29(10), 4398-4414.
(2) Gauthier, B., & van Wassenhove, V. (2016). *J. Neurosci.,* 36(47), 11891-11903.
(3) Gauthier, B., & van Wassenhove, V. (2016). *Cognition*, 154, 55-68.

This series of behavioral, MEG, and fMRI studies explore the endogenous manipulation of sequences of events (ordinality) along their spatial or temporal dimensions and different coordinate systems (allo- and ego-centric).

Large-scale collaboration and Open Science

(1) Chaumon, M., et al. (2022). *Nature Human Behaviour*, 1-13.
Large-scale international study and open-source database dedicated to temporal cognition and more (memory, decision-making,…) containing psychological state questionnaires and behavioral tasks during the Covid-19 lockdowns.