

# **Gabriella Vigliocco**

## **Current Appointment**

Department: Experimental Psychology  
Present appointment: Professor of the Psychology of Language  
Date of appointment: October 1<sup>st</sup>, 2005 FTE: 1.00

## **Education**

1995 PhD, Experimental Psychology University of Trieste, Italy  
1990 BSc, Experimental Psychology (summa cum laudem) University of Padua, Italy

## **Professional History**

2018 - Director, Leverhulme Doctoral Training Programme for the Ecological Study of the Brain UCL

2014 - 18 ViceDean Education, Faculty of Brain Sciences UCL

2010 – 11 Acting Head of Division Psychology and Language Sciences UCL

2008 - 10 Head of Cognitive, Perceptual and Brain Sciences (CPB, now Experimental Psychology) Research Department UCL

2006 - 16 Co-Director, Deafness, Cognition and Language (DCAL) Research Centre UCL

2000 - Lecturer, Reader, Professor Department of Psychology, UCL

1999 Visiting Scientist Max Plank Institute for Psycholinguistics, NL

1996 - 00 Assistant Professor Department of Psychology, University of Wisconsin-Madison, USA

1994 – 96 Fulbright Research Fellow; Research Associate Cognitive Science Program, University of Arizona, USA

1991 - 92 Neuropsychology Intern Ospedale Civile di Vicenza, Italy

### Other Appointments and Affiliations

- 2018 – 23 Royal Society Wolfson Research Merit Fellow
- 2016 – Scientist in Residence, Moss Rehabilitation Research Institute (MRRI), Philadelphia
- 2014 – 15 Member of Promotion Committee, School of Life and Medical Sciences, UCL
- 2013 – 18 Member Faculty Executive Team, Faculty of Brain Sciences, UCL
- 2011 – 13 Leverhulme Professorship

### Commissions of Trust

- 2021 – Member of Advisory Board for Istituto Universitario di Studi Superiori (IUSS), Pavia
- 2021 - ERC Panel
- 2019 - DFG Panel Member Research Unit Competition (Modal and Amodal Cognition), Research Priority Program (ViCom)
- 2019, 2022 ESRC Open Research Area Panel Member
- 2015 - 19 Member, Association for Psychological Sciences (APS) Internationalization Committee
- 2014 - 17 Member of Grant Assessment Panel, Economic and Social Research Council (ESRC)
- 2014 Guest editor: Theme Issue of the Philosophical Transaction of the Royal Society B: *Language as a multimodal phenomenon: Implications for language development, processing and evolution*
- 2014 Member of Centre and Large Grant Assessment Panel, ESRC
- 2009 - Associate Editor, *Frontiers in Language Sciences* (declined editorship European Journal of Cognitive Psychology)
- 2006 - Editorial Board: *Psychological Science* (2007-2014), *Journal of Experimental Psychology: Learning, Memory and Cognition* (2006 – 2011); *Psychological Review* (2004 – 2010); *European Journal of Cognitive Psychology* (2008 – present)
- 2000 - Grant Reviewing for: BA, BBSRC, ESRC, MRC, Royal Society, Wellcome Trust, Israeli National Science Foundation; National Science Foundation (USA); Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO, NL).
- 1996 - Regular Journal Reviewing (selected): *Brain*; *Cerebral Cortex*; *Cognitive Neuropsychology*; *Cognitive Psychology*; *Cognition*; *Current Biology*; *Journal of Child Language*; *Journal of Experimental Psychology (General; Learning, Memory & Cognition)*; *Journal of Memory and Language*; *Journal of Neuroscience*; *Human Brain Mapping*; *Language*; *Linguistics*; *Memory and Cognition*; *Neuropsychologia*; *Perception and Psychophysics*; *Proceedings of the Royal Society B*; *Psychological Bulletin*; *Psychological Review*; *Trends in Cognitive Science*.

### Membership of Scientific Societies

- Member of Experimental Psychology Society (2004 - present), Psychonomic Society (1996 - present), Cognitive Science Society (2000 - present), Neurobiology of Language (2016 – present)

### Prizes, Awards and other Honours:

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|-----------|--|--|
| 2021      | Elected Fellow of the Cognitive Science Society                              | Cognitive Science Society              |
| 2019      | Elected Fellow of the Association for Psychological Sciences                 | Association for Psychological Sciences |
| 2018 – 23 | Royal Society Wolfson Research Merit Award                                   | Royal Society                          |
| 2011 – 13 | Leverhulme Research Professorship  | Leverhulme Trust                       |
| 2013 - 15 | Visiting Professor, Max Planck Institute for Psycholinguistics, Nijmegen, NL | Max Planck Society                     |

2005	Fellowship (two years, comprising my salary and funds for research), declined	Ministero Universita' e Ricerca Scientifica, Italy
1999	Fellowship (one year research leave)	Max Planck Society
1996	Human Mobility Fellowship, declined	EU
1994	Scholarship	Fulbright

### Grants:

#### Active Grants

- 2022 – 2024 **Nordic Foundation:** *Financial literacy: how children learn abstract financial terms.* Gabriella Vigliocco (PI) £28,930
- 2018 – 2025 **Leverhulme Doctoral Scholarships:** *Leverhulme Doctoral Training Programme for the Ecological Study of the Brain (ECOLOGICAL BRAIN DTP).* Gabriella Vigliocco (PI). £1,050,000. This cross-disciplinary 4-year DTP involves UCL PIs from Psychology, Engineering, Computer Science, Geography, Institute of Education and Architecture. It will train the next generation of scientists in the study of the brain and behaviour in real-world contexts (see: <http://ecologicalbrain.org/>).
- 2018 – 2024 **ERC Advanced Grant.** *Ecological Language: A multimodal approach to language processing in the brain (ECOLANG).* Gabriella Vigliocco (PI). €2,250,000. This research programme represents the first attempt to understand the cognitive and neural basis of real-world language learning and processing.

#### Previous Grants

- 2017 – 2020 **ESRC Research Grant.** *The role of iconicity in word learning.* Gabriella Vigliocco (PI), Pamela Perniss (Co-I, U. Brighton), Elizabeth Wonnacott (co-I, PALS, UCL), Chloe Marshall (Co-I, Institute of Education, UCL), Susan Goldin-Meadow (Co-I, U. Chicago). £654,568. The project investigates whether and how caregivers support vocabulary learning in young children. It is novel as it focuses on the ensemble of multimodal cues (speech, eyegaze, gestures and prosody). It combines naturalistic and experimental studies and will disseminate findings outside academic audiences especially to early-years educations.
- 2015 – 2017 **European Commission Marie Slodowska-Curie.** (2015 –2017). *From new Objects to new woRds through GEstures: how sensory-motor experiences of objects and tools influence word acquisition in children (FORGE).* Recipient: Dr. Laura Sparaci, Gabriella Vigliocco: scientist in charge. This project investigated the relationship between object manipulation, gestures and learning objects names.
- 2012 - 2015 **Nuffield Foundation.** *The role of Affect in Learning Abstract Concepts.* Gabriella Vigliocco (PI), Courtenay Norbury (co-PI). £124,600. This project was the first investigation of how children (6-12 years old) learn abstract words and concepts. We have shown that children up to 8 years of age learn better abstract words that have emotional connotations (e.g., *promotion*). As these findings have potential implications for primary education, I have disseminated the findings at teachers' conferences both in the UK as well as in Europe.
- 2006 - 2016 **ESRC Centre Grant.** *Deafness, Cognition and Language (DCAL) Research Centre.* (2006–2015). Bencie Woll (director), Ruth Campbell; Mairead MacSweeney; Gary Morgan; Gabriella Vigliocco (co-directors) £3,123,067 (2006 - 2010); £5,400,000 (2011 - 2015). DCAL's mission has been to study questions about language – its origins,

development and processing, using the communication of d/Deaf people as a model. Through its research and ancillary activities, the Centre further aimed to change perceptions of deafness and adjust hearing perspectives on deafness research. I led the "Language and Cognition Strand", focusing on similarities and differences in processing sign and spoken languages, and developing new paradigms for the study of sign language. In addition to 15 publications, I have been active through the years in disseminating research findings to the d/Deaf community. I am especially proud of: the instrumental role I played during my tenure in raising the stature of our sign language and deafness research to mainstream international journals and conferences; to have supervised 2 out of the only three deaf PhD students in the centre. The centre is now continuing its activities focusing more on Deafness.

- 2010 - 2013 **ESRC Research Grant**. *The role of sensori-motor and affective information in semantic representation*. £733,000 (final report received highest score). The project addressed the question of how words get their meanings. A view developed within cognitive science and neuroscience that has gained support and popularity recently is that processing words evokes our perceptual and motoric experience with the corresponding object or action. Here, we provided a more rigorous test of this hypothesis, crucially, both in a signed language (British Sign Language, BSL) and in English. But the most central, and novel contribution concerns how we represent abstract words (e.g., *imagine, inspire*). Our work indicates that while perception and action are critical for processing concrete words, emotion is critical for abstract words.
- 2006 - 2009 **European Commission NEST PATHFINDER Program (Framework 6)**. *The origin, representation and use of abstract concepts (ABSTRACT)*. Stefano Cappa (Admin. Coordinator; San Raffaele, Milan), Manuel Carreiras (Partner, Univ. of La Laguna, Tenerife); Maria Luisa Lorusso (Partner, Institute Nostra Famiglia, Milan), Csaba Pleh (Partner, Budapest Univ.), Gabriella Vigliocco (Scientific Coordinator). €1,430,000. This project provided a systematic and cross-linguistic investigation of how abstract words are represented in the brain. I wrote the proposal and led the international interdisciplinary team (Linguistics, Computational Modelling, Psychology and Neuroscience). My most novel research during the award consisted in the development and testing of cognitively and neurally plausible probabilistic computational models of semantic representation.
- 2003 - 2006 **BBSRC Research Grant**. *Nouns and Verbs in the Brain*. Gabriella Vigliocco (PI). £215,201. The project provided a rigorous test of the hypothesis that syntax, considered to be a core property of human language, may drive neural organisation of language networks. This hypothesis was assessed using behavioural and imaging methods and across different languages. Our work clearly showed that semantics, the type of entities and events words were associated) determined their neural representation, but crucially not their syntactic properties.
- 2003 - 2006 **ESRC Research Grant**. *Language specific effects on Cognition*. Gabriella Vigliocco (PI). £214,528. I tested cross-linguistically the idea that the language you speak can affect the the way you think using behavioural methods. Our results showed that, although indeed there are some cases in which this is true, these effects are remarkably limited.
- 2000 - 2004 **Human Frontier Science Program, Program Grant**. *Cross-linguistic investigation of the representation and neural substrate of word meaning and syntax* Gabriella Vigliocco (PI); Stefano Cappa (co-PI, San Raffaele, Milan), Peter Indefrey (co-PI, Max Planck Institute), Merrill Garrett (co-PI, University of Arizona), Monserrat Sanz (co-PI, Kobe City University) and Patrizia Tabossi (co-PI, University of Trieste). \$720,000. This was my first program grant and my first experience in leading an international, interdisciplinary team. The project was the first attempt to develop cognitively and neural valid quantitative measures of semantic similarity among words, tested in behavioural

and imaging experiments.

2003 **J. S. McDonnell 21st Century Pilot Award.** *Semantic similarity in brain and behaviour.* Gabriella Vigliocco (PI) \$30,000. This award gave me the opportunity to obtain pilot data for the BBSRC project listed above.

1998 – 2000 **National Science Foundation (USA) research grant.** Syntactic and semantic forces in subject-verb agreement. Gabriella Vigliocco (PI). \$ 182,800. This award allowed me to follow-up from studies in my dissertation.

**Other**

**UCL Global Engagement Programme:** UCL – MRRI workshop: “New directions in language and action research: Implications for theory and treatment”, £2,000. UCL, March, 2018.

**Experimental Psychology Society Workshop Awards (2010, 2012, 2015).** £3,500 each.

**ESF Exploratory Workshop: “multilingualism from an interdisciplinary perspective”** (approx £9,600), Novartis Foundation, London, October, 2007..

Travel awards from: University of Wisconsin, University College London and British Council (1997 to present).

**Invited talks:**

2023	<p><i>Language, Space and Large Language Models.</i> Bressanone symposium on Language and Perception, January.</p> <p><i>Situating semantic processing and learning in the real-world.</i> Invited speaker, CAOS Workshop, Rovereto, May.</p> <p><i>Situating semantic processing in the real-world.</i> Invited Concepts in the Mind symposium, European Philosophy and Psychology Society Meeting, Prague, August.</p>
2022	<p><i>Multimodal language production and comprehension.</i> SFARI-MIT workshop on language and social interaction. NY, December.</p> <p><i>Multimodal language and aphasia.</i> Keynote, German Aphasia Association, Biedefeld, November.</p> <p><i>Out of sight, out of mind: abstraction and language processing in displaced contexts.</i> Workshop on Processing abstract concepts in humans and machine, August, Manchester.</p>
2021	<p><i>Ecological Language: A multimodal approach to language processing and Development.</i> Abralino Vivo Series, October</p> <p><i>Ecological Language: A multimodal approach to language processing and Development.</i> Keynote, ESLP Conference, September</p> <p><i>Learning abstract concepts: the interplay of experiential and linguistic information.</i> Workshop on grounded and symbolic representation (online), March.</p> <p><i>Creating a Multimodal Corpus of Dyadic Communication: The ECOLANG experience.</i> EMLALR (online, with Gwen Brekelman), April.</p>
2020	<p><i>Ecological Language: A multimodal approach to language comprehension.</i> MPI workshop, October.</p> <p><i>Ecological Language: A multimodal approach to language comprehension</i> Plenary lecture, UK Cognitive Linguistic Conference, July.</p> <p><i>Ecological Language: A multimodal approach to language comprehension.</i> Colloquium, Moss Rehabilitation Research Institute, April.</p>
2019	<p><i>Ecological Language: A multimodal approach to language comprehension.</i> Plenary Lecture. CoNLL19: Computational Natural Language Learning</p>

	<p>Conference, Hong Kong, November.</p> <p><i>Ecological Language: A multimodal approach to language comprehension.</i> Colloquium, Hong Kong University; Chinese University, Hong Kong, October.</p> <p><i>Ecological Language: A multimodal approach to language comprehension.</i> Plenary Lecture. European Society for Cognitive Psychology (ESCOP), Tenerife, September.</p> <p><i>Learning and using abstract concepts.</i> Plenary Lecture. AIC19: International Workshop on Artificial Intelligence and Cognition, Manchester, September.</p> <p><i>Ecological Language: A multimodal approach to language comprehension.</i> Plenary Lecture. Psycholinguistics Symposium, Tarragona, April.</p>
2018	<p><i>Ecological Language: a new approach to the study of language.</i> Plenary Lecture, Embodied and Situated Language Processing Conference, Lancaster, August.</p> <p><i>Iconicity in Language Development and Evolution.</i> Plenary Lecture, 4<sup>th</sup> St Petersburg Winter Workshop on Experimental Studies of Speech and Language. St Petersburg, February.</p>
2017	<p><i>Learning concrete and abstract semantics: Insights from developmental and simulated language disorders.</i> Invited Symposium: "Symbolic or Embodied? Abstract meaning in mind and Brain". ESCOP2017, Berlin, September.</p> <p><i>Modelling Semantic Memory: Key Psychological Issues.</i> Keynote lecture, 16<sup>th</sup> Psycholinguistics in Flanders, Leuven, May.</p> <p><i>Website, social media and personal development: Think first!</i> Women in Cognitive Science Symposium, ICPS17, Vienna, March.</p> <p><i>Objects and Events in the Brain.</i> EPS Events in Memory and Language Workshop, York, January.</p>
2016	<p><i>Learning and Processing Abstract Concepts.</i> Keynote speaker, International Symposium on Abstract Concepts, Amsterdam, November.</p>
2015	<p><i>Multimodality and Iconicity in language evolution, development and processing.</i> Keynote lecture, Cognitive Linguistics Society, July.</p> <p><i>Language as a multimodal phenomenon: Implications for processing and development.</i> Jurnee Scientifique, ISCT, Toulouse, France, February</p> <p><i>The bridge of iconicity: from a world of experience to experience of language.</i> Language and Perception Workshop, Norwich, February</p> <p><i>Language in Context: an ecological turn to embodied language</i> (organizer and speaker). Workshop sponsored by Experimental Psychology Society, UCL, January.</p>
2014	<p>Invited member, Ernst Strüngmann Forum <i>Where is the action? The pragmatic turn in cognitive science</i>, Frankfurt</p> <p>British Academy Workshop New Methods in Language Research, Edinburgh, September</p> <p>Keynote, German Linguistic Society, Marburg, March</p> <p>EMCAT Workshop, Marburg, March</p>
2013	<p><i>Semantic Representation</i> Max Plank Institute for Psycholinguistics, Nijmegen, April</p> <p><i>Semantic Representation</i> Plenary Lecture. Embodied and Situated Language Processing Conference, Potsdam, July</p> <p><i>Abstract Concepts in the Brain.</i> Invited Presentation, Embodied Language</p>

	Processing Workshop, Cambridge, September.
2012	<p><i>Iconicity in language learning and language processing.</i> Workshop on Multimodality in language learning. Nijmegen, June.</p> <p><i>What if the study of language started from signed rather than spoken languages?</i> Sylvius Lecture, Leiden, June.</p> <p><i>Integrating embodied and linguistic information in semantic representation.</i> Is the semantic system embodied? Symposium at the British Neuropsychological Society Conference, London, March.</p> <p><i>What if... the study of language started from signed rather than spoken languages?</i> (organiser and speaker). Workshop sponsored by Experimental Psychology Society, UCL, January.</p>
2011	<p><i>Representing Abstract Concepts. New Directions in Embodiment Research.</i> Symposium sponsored by APA and EU, September, San Sebastian.</p> <p><i>Abstract Concepts in the Mind.</i> Converging Approaches to Semantic Memory. Symposium, International Conference on Memory, York, July.</p>
2010	<p><i>Toward a Theory of Meaning Representation.</i> Keynote Lecture, Joint meeting of CSDL and ESLP. La Jolla, September.</p> <p><i>Toward a Theory of Meaning Representation.</i> Keynote Lecture, UK Cognitive Linguistic Association. University of Hertfordshire, July.</p> <p><i>Word and Concepts in the Brain.</i> Interdisciplinary Workshop. Granada, Spain, September.</p> <p><i>The Representation of Abstract Concepts</i> (organizer and speaker). Workshop sponsored by Experimental Psychology Society, UCL, January.</p>
2009	<p><i>Modelling Semantic Representation. Distributional Semantics beyond Concrete Concepts</i> Workshop, Amsterdam, July.</p> <p><i>Learning Semantics with Hidden Markov Topic Models.</i> Mark Andrews, Gabriella Vigliocco. Invited talk, recipient of annual award of the Cognitive Science Society for best paper in Computational modelling, July, 2009.</p>
2008	<p><i>Representing Abstract Words</i>, Invited symposium (co-chaired with M.Carreiras), International Congress of Psychology, Berlin, July.</p> <p><i>Linguistic categories in the brain.</i> Symposium: Categories in the brain International Neuropsychology Society Meeting, Tenerife, June. This is a very prestigious meeting of a small international and interdisciplinary group of neuroscientists and physiologists. Non-members can only contribute on invitation.</p> <p><i>Linguistic Categories in the Brain</i>, Keynote Lecture, Psycholinguistics in Flanders, Ghent, June.</p>
2007	<p><i>Multilingualisms from an Interdisciplinary Perspective</i>, (organizer). ESF Workshop London, October.</p> <p><i>Toward a theory of meaning representation in language use.</i> Keynote lecture, Spanish Psycholinguistic Symposium, Palma de Mallorca, April.</p> <p><i>Language and Imagery: an investigation of iconicity in sign language.</i> Invited symposium on sign language, CUNY Human Sentence Processing Conference, San Diego, USA, March.</p>
1996 - onward	<p>I have given research seminars (colloquia) at more than 60 different institutions in the UK and overseas (in departments of Linguistics, Computer Science, Neurology, in addition to departments of Psychology), and at a variety of seminar series for academics and non academics.</p> <p>Within the UK, recent research seminars were given at: Edinburgh, Stirling,</p>

	<p>Essex, Sussex, Durham, Birkbeck, MRC Cognition and Brain Unit (Cambridge), York, Bristol. In Europe, I have given seminars at: Department of Psychology, University of Bsrcelona; Max Planck Institute for Psycholinguistics (Nijmegen, NL); Max Planck Institute for Cognitive Neuroscience (Leipzig, Germany); Department of Computational Linguistics (Saarland, Germany); University of Louvain (Belgium); University of Leiden (NL); Universities of Milan, Trieste, and Genoa (Italy), University of Geneva (Switzerland). In the US, I have given seminars at: Iowa University, University of California – S. Diego; University of Wisconsin; Rice University; Johns Hopkins; University of Illinois; Lehigh University; Emory University.</p>
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**Academic supervision and mentoring:**

Throughout my career, I have supervised for an extensive period of time, more than 40 early career researchers in my laboratory and I have mentored many others in my role as Head of Department and senior academic. I am proud to say that all the post-docs and PhD students whom I have supervised have moved to more advanced posts both in academia and industry. Initial destinations of some of my PhD students and post-docs include: Yan Gu (post-doc 2018-2021): Lectureship, Essex University; David Sidhu (research fellow 2020-2022): Assistant Professorship, Carleton University, Canada; Anna Krason (PhD Student 2018-2022): Post-doc at Moss Rehabilitation Research Institute, Philadelphia; Margherita Murgiano (post-doc 2017-2019): Professional Interpreter, Linguaggio Italiano dei Segni; Yasamin Motamedi (post-doc 2017-2020): Behavioural Insight Team; Armand Rotaru (PhD Student, 2016-2020): Arthur D Little Consultancy; Laura Speed (PhD student 2010-2014): post-doc Radbound University Nijmegen; Stavroula Kousta (post-doc: 2007-2011): Editor, Trends in Cognitive Science (now Editor of Nature Human Behaviour); Pamela Perniss (Marie Curie Fellow and post-doc 2009-2014): Professor, University of Cologne; Marta Ponari, Lecturer, Kent University (post-doc: 2011-2014); David Vinson, ESRC Fellowship, Lecturer UCL (lab manager: 1996-2005; PhD student: 2006-2008; post-doc: 2009-2012).

## Research

I direct the Language and Cognition Laboratory (<http://www.language-cognition-lab.org/>). Throughout the years, I contributed and led a shift in the fields of Psychology, Neuroscience and Linguistics from studying language as a symbolic capacity, evolved, learnt and use separately from the rest of human cognition, to one in which language is grounded in basic sensorimotor functions and that needs to be studied in its ecological niche.

I use methods from psychology, neuroscience and computational modelling and I seek converging evidence from different languages and populations: adults, children, deaf individuals using sign language, and people with aphasia.

I have published more than 160 papers (h-index: 60, WoS). My initial work provided cross-linguistic evidence that language production is dependent on imagistic cognition, contra to the prevalent modularist view at the time (e.g., Vigliocco & Hartsuiker, 2002). I showed that language processing engages the same systems used in vision (e.g., Meteyard et al., 2007). My group provided the first evidence that abstract words and concepts (e.g., *idea*) are rooted in the neural system processing emotions (e.g., Kousta et al., 2011; Vigliocco et al., 2014), rather than resulting from high-level symbolic operations. This link to the emotional system is especially important during development (Ponari et al., 2017, 2020).

Since 2006 I initiated a programme challenging the central tenet according to which linguistic form is only arbitrarily linked to meaning, using sign language as a model. We have provided first evidence that *iconicity* (more direct links between form and meaning) facilitates language processing and development, contrary to the dominant view that it is an accident of modality (in signed languages) or irrelevant (in spoken languages) (e.g., Perniss et al., 2017; Thompson et al., 2012). We have developed theoretical perspectives on language evolution, development and processing in which iconicity and arbitrariness are key adaptations (e.g., Perniss et al., 2010; Perniss & Vigliocco, 2014).

I have developed computational models of the representation of word meaning across domains of knowledge (objects, actions and abstractions). We were first to develop cognitively plausible models that combine information from sensory-motor experience with information extracted from language to represent meaning (e.g., Vigliocco, *et al.*, 2004; Andrews et al., 2009; and more recently language, vision and emotion, Rotaru & Vigliocco, 2020). Having explicit models allowed me to tackle some long-standing and controversial issues: (i) *linguistic relativity* (does the language one speaks affect the way one thinks?). We found surprisingly limited domains in which effects of linguistic relativity are observed (e.g., Vigliocco et al., 2005; Kousta, 2008). (ii) The representation of *grammatical categories* in the brain (are nouns and verbs represented in separable neural systems?). Our behavioural, patient and imaging evidence supports semantic, rather than syntactic, neural organisation (e.g., Vigliocco et al., 2011).

My current work brings these previous insights together to the study of language as *multimodal and social* as it has evolved, is learnt and is used in real-world face-to-face contexts (Murgiano et al., 2021). To understand what are the multimodal behaviours relevant to communication, I have collected a corpus of dyadic interaction between an adult and their children (to tap into language acquisition) and to another adult. Using data from the corpus we have shown that speakers use iconicity when talking about referents that are not physically present (Motamedi et al., preprint); identified the range of multimodal caregivers' behaviours associated with vocabulary learning by 3-4 year-old children (Donnellan et al., 2023; Shi et al., 2022); established that speakers use multimodal behaviours (such as gestures and prosodic adaptations) in a communicative efficient manner (Grzyb et al., preprint). Using computational language models to quantify surprisal (predictability) of words in speech, we further provided first EEG evidence that multimodal cues are dynamically engaged in language comprehension at the same time of linguistic processing, contra to the dominant view that instead linguistic processing does not require multimodal cues (Zhang et al., 2021; under review).

My research is international and highly interdisciplinary. I collaborate with (especially early career colleagues from many universities in the UK, Europe and America. I am scientist in residence at the Moss Rehabilitation Research Institute (Philadelphia); I have been member of many international grant review panels and I organised a major interdisciplinary international conference (*International Convention of Psychological Sciences*, 2017). I currently lead the Ecological Brain Doctoral Training

Programme at UCL. It involves a team comprising neuroscientists, psychologists, architects, engineers, computer scientists, educators and geographers sharing the vision that understanding how humans function in real-world environments, the ecological niche in which the brain evolved, is critical to explaining the richness of human experiences and to shaping the environment in which we live.

Although since 2006 I have not been travelling very much (single parenting and due to illness), I have given seminars and invited talks at international conferences (1-2 per year). I have presented to diverse audiences: cognitive scientists, philosophers, computer scientists, neurologists, cognitive neuroscientists, speech and language therapists. I also carry out outreach activities regularly targeting general public, parents (of both deaf and hearing children), professionals (especially educators, speech and language therapists) both nationally and internationally.

## **Publications**

### **Preprints/Under Review**

Grzyb B, Frank SL, Vigliocco G (2023, JEP:G, under review). Communicative efficiency in multimodal language. *PsyArXiv*.

Kewenig V, Vigliocco G, Skipper JI (2023, eLife, under review). When abstract becomes concrete: naturalistic encoding of concepts in the brain. *bioRxiv*, 2022.09.08.506944.

Kewenig V, Edwards C, Lacombe D'Estalén Q, Recharadt A, Skipper JI, Vigliocco G (2023). Evidence of human-like visual-linguistic integration in multimodal large language models during predictive language processing. arXiv preprint arXiv:2308.06035.

Krason A, Varley R, Vigliocco G (2023, JEP:LMC under review). Understanding discourse in face-to-face settings: The impact of multimodal cues and listening conditions.

Motamedi Y, Murgiano M, Grzyb B, Gu Y, Kewenig V, Brieke R, ... Vigliocco G (2023, Child Development, under review). Language development beyond the here-and-now: iconicity and displacement in child-directed communication. *PsyArXiv*.

Vigliocco G, Convertino L, De Felice S, Gregorians L, Kewenig V, ..., Spiers H (2023). Ecological Brain: Reframing the Study of Human Behaviour and Cognition. *PsyArXiv*

### **Published**

Zhang Y, Ding R, Frassinelli D, Tuomainen J, Klavinsis-Whitting S, Gabriella Vigliocco (accepted). The role of multimodal cues in second language comprehension. *Scientific Reports*.

Sidhu D, Kachiatorian, N, Vigliocco G. (in press). Effects of iconicity in recognition memory. *Cognitive Science*.

Reggin, L, Gomez Franco, LE, Horchak OV, Labrecque, D, Lana, N, Rio, L, Vigliocco, G. (in press). Consensus paper: Situated and embodied language acquisition. *Journal of Cognition*.

De Felice S, Hamilton AFC, Ponari M, Vigliocco G (2023). Learning from others is good, with others is better: the role of social interaction in human acquisition of new knowledge. *Philosophical Transactions of the Royal Society B 378 (1870)*, 20210357

Donnellan E, Jordan-Barros A, Theofilogiannakou N, Brekelmans G, ... Vigliocco G (2023). The impact of caregivers' multimodal behaviours on children's word learning: A corpus-based investigation. *Proceedings of the Annual Meeting of the Cognitive Science Society (45)*

- Madhyastha P, Zhang Y, Vigliocco G. (2023). Are words equally surprising in audio and audio-visual comprehension? *Proceedings of the Annual Meeting of the Cognitive Science Society (45)*, arXiv preprint arXiv:2307.07277
- Krason A, Vigliocco G, Mailend ML, Stoll H, Varley R, Buxbaum LJ (2023) Benefit of visual speech information for word comprehension in post-stroke aphasia. *Cortex 165*, 86-100
- Wang Y, Donnellan E, Vigliocco G (2023). How Speech and Representational Gestures Align in Child-Directed Language: A Corpus-based Study. *Proceedings of the Annual Meeting of the Cognitive Science Society 45 (45)*
- Donnellan E, Özder LE, Man H, Grzyb B, Gu Y, Vigliocco G (2022). Timing relationships between representational gestures and speech: A corpus based investigation. *Proceedings of the Annual Meeting of the Cognitive Science Society 44*, 2052-2058
- Shi J, Gu Y, Vigliocco G (2022). Prosodic modulations in child-directed language and their impact on word learning. *Developmental Science*, e13357
- Sidhu DM, Vigliocco G (2022). I don't see what you're saying: The maluma/takete effect does not depend on the visual appearance of phonemes as they are articulated. *Psychonomic Bulletin & Review*, 1-9
- Conca F, Catricalà E, Canini M, Petrini A, Vigliocco G, Cappa SF, Della Rosa PA (2021). In search of different categories of abstract concepts: a fMRI adaptation study. *Scientific Reports*, 11, 22587
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### **Book Chapters**

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### **Other Publications**

- Zorzi, M., & Vigliocco, G. (2000). Dissociation between regular and irregular in connectionist architectures Two processes, but still no special linguistic rules. Commentary to: "Lexical entries and rules of language: A multidisciplinary study of German inflection" by Clahsen. *Behavioral and Brain Sciences*, 22, 1045-+.
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### **Knowledge Transfer**

I actively disseminate to appropriate groups results from my research. In recent years, I have been invited to a number of meetings involving educators and speech and language therapists (both in the UK and in Europe) to present my work on the learning of abstract concepts, and my work on multimodal language which has also been disseminated in the form of *briefing sheet* to relevant governmental departments.

In the past, I have organised exhibits at the science museum. The last one (2014) was three weeks long and attracted more than 1,500 visitors from all over the world, both adults and children. I have also organised two symposia for the British Festival of Science which have received media coverage and very positive feedback from the participants.

During my time as co-director of DCAL, I have been actively involved in dissemination to the Deaf organisations and individuals and maintaining strong links with non-academic users as members of the D/deaf Community and stakeholders. My lab members regularly attended (DCAL Roadshow) Deaf community events in order to publicise the work of DCAL and to engage them into our research.

My work has featured in *Nature News* and the *Psychologist*. I contributed to the development of a BBC Radio 4 series (*Momentary Slips of the Mind*) and features in two of these shows.

### **Teaching**

#### ***Management of Teaching within UCL***

As Vice Dean Education for FBS, I have been responsible for the Faculty education strategy. FBS provides undergraduate education to more than 600 students, M-Level education to more than 800 students and PhD (or professional doctorates) to more than 800 students. As VD, I have been responsible for the faculty level oversight of all programmes. I also regularly contributed to UCL or SLMS level working groups on specific issues (e.g., UCL e-learning strategy; SLMS PGR education).

Highlights of achievements during my tenure include:

1. To promote research-embedded education from day 1 for UG students, I have introduced the “Meet the Researcher” initiative whereby students in their first year as UG can watch short videoclips of main researchers within the faculty describing their work and then choose who, among them they want to meet in person for an interview. The initiative has been very successful. Our Faculty Tutor, who implemented it, was recognized for this work with a Provost Teaching Award and the scheme was presented to the other UCL Faculties as an example of innovation and good practice.
2. To provide UG students with opportunities for longer research experience as well as experience of professional environments, I have introduced the MSci programme in Psychology, this is a 4-year UG programme where in the final year, students can choose between carrying out a longer research project in a lab of their choice or an internship in various organizations. The programme is proving to be successful, with more and more students signing up to it (rather than the 3-years BSc). It is expected that it will become the standard offering in the Division, while the BSc will be maintained as a backup. The MSci has clear financial advantages over the BSc both for the faculty and for the students.
3. I have contributed throughout the years to the change in promotion criteria to allow for greater recognition of education activities along with research activities, both in my interactions with the VP Education as well as member of the SLMS promotion committee in 2014-15.
4. I have carried out review processes of PGT education within the faculty, including a major review of IoN education which has led to a full reorganization of education activities within the Institute.
5. Finally, to increase numbers of PhD students within the faculty, I have successfully led the bid for the Leverhulme Doctoral Training Programme for the Ecological Study of the Brain. This is the first DTP homed in the faculty as well as the first Leverhulme DTP within UCL. I am also actively encouraging PIs in the faculty to apply for funding.

As Acting Head of the Psychology and Language Sciences Division, I managed a large division with 110 academics grouped in 6 major research department. During my tenure I had been responsible for a number of senior hires and the development and approval of major estate projects.

As Head of the CPB Research Department, I was responsible for the management and monitoring of existing MSc courses, and the development of new MSc courses including allocation of teaching for the Psychology BSc. In addition, I was highly involved in the process of rationalisation of language-related MScs across the PALs division which is currently underway.

### **Developing and Delivering Challenging Teaching**

#### At post-graduate Level

I regularly contribute modules for the Psychological Science MSc course (Language Development and Language Processing); for the Neuroscience of Language MSc (Semantic Representation) and for the Doctorate in Educational Psychology (Language Development and Bilingual Language Acquisition). In my lectures I combined a description of the research, with practical examples and with debates. Students' evaluations have always been positive.

I have been invited to contribute several lectures to international schools along with leading figures in the field (e.g., the *European Diploma in Brain and Cognitive Sciences*). In 2007, I convened a very successful international summer school for post-graduate students in deafness, cognition and

language sciences. I am expected to convene a second DCAL summer school in summer 2010 for which I will seek funding from the ESRC.

#### At undergraduate Level

I regularly contributed lectures to the "Language and Cognition" (B2208) second year course. In the years, I have played a central role in redesigning its content working closely with the course convenor to move toward a more interactive teaching style, including setting up debates on hotly debated issues and giving more hands on demonstrations of actual research findings. I also regularly, run first year labs.

I lead third year seminars. I have introduced peer reviewing as a formative exercise to improve student writing. For each essay students submit a draft, which is reviewed by a peer, and then a final version, amended following the reviewer's recommendations, which I mark. The scheme is now used by a number of other seminar leaders in the department for BSc students in their second and third year. Taking advantage of my many years of experience in interview panels of all sorts, I also run mock interview sessions in which students (who volunteer) first submit to the group their CV, cover letter and job description for the position they have (or wish to) apply. During the session, 3-4 other students join me on the panel, we run the mock interview and finally we discuss the interview with the whole group. These sessions have proved to be extremely popular among students.

#### **Part time working and personal circumstances**

2006: Maternity Leave (6 months)

2012: Sick Leave (6 months)