Investigating Object Orientation Effects Across 18 Languages

Sau-Chin Chen1, Erin Buchanan2, Zoltan Kekecs3,64, Jeremy K. Miller4, Anna Szabelska5, Balazs Aczel3, Pablo Bernabeu6,65, Patrick Forscher7,66, Attila Szuts3, Zahir Vally8, Ali H. Al-Hoorie9, Mai Helmy10,67, Caio Santos Alves da Silva11, Luana Oliveira da Silva11, Yago Luksevicius de Moraes11, Rafael Ming Chi Santos Hsu11, Anthonieta Looman Mafra11, Jaroslava V. Valentova11, Marco Antonio Correa Varella11, Barnaby Dixson12, Kim Peters12, Nik Steffens12, Omid Ghasemi13, Andrew Roberts13, Robert M. Ross14, Ian D. Stephen68, Marina Milyavskaya15, Kelly Wang15, Kaitlyn M. Werner15, Dawn Liu Holford16, Miroslav Sirota16, Thomas Rhys Evans17, Dermot Lynott18, Bethany M. Lane19, Danny Riis19, Glenn P. Williams20, Chrystalle B. Y. Tan21, Alicia Foo22, Steve M. J. Janssen22, Nwadiogo Chisom Arinze23, Izuchukwu Lawrence Gabriel Ndukaihe23, David Moreau24, Brianna Jurosic25, Brynna Leach25, Savannah Lewis26, Peter R. Mallik27, Kathleen Schmidt25, William J. Chopik28, Leigh Ann Vaughn29, Manyu Li30, Carmel A. Levitan31, Daniel Storage32, Carlota Batres33, Janina Enachescu34, Jerome Olsen34, Martin Voracek34, Claus Lamm35, Ekaterina Pronizius35, Tilli Ripp36, Jan Philipp Röer36, Roxane Schnepper36, Marietta Papadatou-Pastou37, Aviv Mokady38, Niv Reggev38, Priyanka Chandel39, Pratibha Kujur39, Babita Pande39, Arti Parganiha39, Noorshama Parveen39, Sraddha Pradhan39, Margaret Messiah Singh39, Max Korbmacher40, Jonas R. Kunst41, Christian K. Tamnes41, Frederike S. Woelfert41, Kristoffer Klevjer42, Sarah E. Martiny42, Gerit Pfuhl42, Sylwia Adamus43, Krystian Barzykowski43, Katarzyna Filip43, Patrícia Arriaga44, Vasilije Gvozdenović45, Vanja Ković45, Zhong Chen46, Fei Gao46, Lisa Li46, Jozef Bavoľár47, Monika Hricová47, Pavol Kačmár47, Matúš Adamkovič48,69, Peter Babinčák49, Gabriel Baník49,50, Ivan Ropovik50,70, Danilo Zambrano Ricaurte51, Sara Álvarez Solas52, Harry Manley53,71, Panita Suavansri53, Chun-Chia Kung54, Belemir Çoktok55, Asil Ali Özdoğru^55, 72^, Çağlar Solak56, Sinem Söylemez56, Sami Çoksan57, İlker Dalgar58, Mahmoud Elsherif59, Martin Vasilev60, Vinka Mlakic61, Elisabeth Oberzaucher62, Stefan Stieger61, Selina Volsa61, Janis Zickfeld63, & Christopher R. Chartier25

1 Department of Human Development and Psychology, Tzu-Chi University, Hualien, Taiwan

2 Harrisburg University of Science and Technology, Harrisburg, PA, USA

3 Institute of Psychology, ELTE, Eotvos Lorand University, Budapest, Hungary

4 Department of Psychology, Willamette University,Salem OR, USA

5 Institute of Cognition and Culture, Queen’s University Belfast, UK

6 Department of Psychology, Lancaster University, Lancaster, United Kingdom

7 LIP/PC2S, Université Grenoble Alpes, Grenoble, France

8 Department of Clinical Psychology, United Arab Emirates University, Al Ain, UAE

9 Independent Researcher

10 Psychology Department, College of Education, Sultan Qaboos University, Muscat, Oman

11 Department of Experimental Psychology, Institute of Psychology, University of Sao Paulo, Sao Paulo, Brazil

12 School of Psychology, University of Queensland, Brisbane, Australia

13 Department of Psychology, Macquarie University, Sydney, Australia

14 Department of Philosophy, Macquarie University, Australia

15 Department of Psychology, Carleton University, Ottawa, Canada

16 Department of Psychology, University of Essex, Colchester, UK

17 School of Social, Psychological and Behavioural Sciences, Coventry University, Coventry, UK

18 Department of Psychology, Maynooth University, Maynooth, Ireland

19 Division of Psychology, School of Social and Health Sciences, Abertay University, Dundee, UK

20 School of Psychology, Faculty of Health Sciences and Wellbeing, University of Sunderland, Sunderland, UK.

21 School of Psychology and Vision Sciences, University of Leicester, Leicester, UK

22 School of Psychology, University of Nottingham Malaysia, Selangor, Malaysia

23 Department of Psychology, Alex Ekwueme Federal University, Ndufu-Alike, Nigeria

24 School of Psychology, University of Auckland, Auckland, NZ

25 Department of Psychology, Ashland University, Ashland, OH, USA

26 Department of Psychology, University of Alabama, Tuscaloosa, AL, USA

27 Hubbard Decision Research, Glen Ellyn, IL, USA

28 Department of Psychology, Michigan State University, East Lansing, MI, USA

29 Department of Psychology, Ithaca College, Ithaca, NY, USA

30 Department of Psychology, University of Louisiana at Lafayette, Lafayette, LA, USA

31 Department of Cognitive Science, Occidental College, Los Angeles, USA

32 Department of Psychology, University of Denver, Denver, CO, USA

33 Department of Psychology, Franklin and Marshall College, Lancaster, PA, USA

34 Faculty of Psychology, University of Vienna, Wien, Austria

35 Department of Cognition, Emotion, and Methods in Psychology, Faculty of Psychology, University of Vienna, Vienna, Austria

36 Department of Psychology and Psychotherapy, Witten/Herdecke University, Germany

37 School of Education, National and Kapodistrian University of Athens, Athens, Greece

38 Department of Psychology and School of Brain Sciences and Cognition, Ben Gurion University, Beer Sheba, Israel

39 School of Studies in Life Science, Pt. Ravishankar Shukla University, Raipur, India

40 Department of Health and Functioning, Western Norway University of Applied Sciences, Bergen, Norway

41 Department of Psychology, University of Oslo, Oslo, Norway

42 Department of Psychology, UiT - The Arctic University of Norway, Tromsø, Norway

43 Institute of Psychology, Jagiellonian University, Krakow, Poland

44 Iscte-University Institute of Lisbon, CIS-IUL, Portugal

45 Laboratory for Neurocognition and Applied Cognition, Faculty of Philosophy, University of Belgrade

46 Faculty of Arts and Humanities, University of Macau, Macau, China

47 Department of Psychology, Faculty of Arts, Pavol Jozef Šafarik University in Košice, Slovakia

48 Institute of Social Sciences, CSPS, Slovak Academy of Sciences

49 Institute of Psychology, University of Presov, Slovakia

50 Institute for Research and Development of Education, Faculty of Education, Charles university, Czechia

51 Faculty of Psychology, Fundación Universitaria Konrad Lorenz, Bogotá, Colombia

52 Ecosystem Engineer, Universidad Regional Amazónica Ikiam, Tena, Ecuador

53 Faculty of Psychology, Chulalongkorn University, Thailand

54 Department of Psychology, National Cheng Kung University, Tainan, Taiwan

55 Department of Psychology, Üsküdar University, İstanbul, Turkey

56 Department of Psychology, Manisa Celal Bayar University, Manisa,Turkey

57 Department of Psychology, Erzurum Technical University, Erzurum, Turkey

58 Department of Psychology, Ankara Medipol University, Ankara, Turkey

59 Department of Vision Sciences, University of Leicester, United Kingdom

60 Bournemouth University,Talbot Campus, Poole, UK

61 Department of Psychology and Psychodynamics, Karl Landsteiner University of Health Sciences, Krems an der Donau, Austria

62 Department of Evolutionary Anthropology, University of Vienna, Wien, Austria

63 Department of Management Aarhus University, Aarhus, Denmark

64 Department of Psychology, Lund University, Lund, Sweden

65 Department of Language and Culture, UiT The Arctic University of Norway, Tromsø, Norway

66 Busara Center for Behavioral Economics, Nairobi, Kenya

67 Psychology Department, Faculty of Arts, Menoufia University, Shebin El-Kom, Egypt

68 Department of Psychology, Bournemouth University, UK

69 University of Jyväskylä, Finland

70 Faculty of Education, University of Presov, Slovakia

71 Faculty of Behavioral Sciences, Education, & Languages, HELP University Subang 2, Malaysia

72 Department of Psychology, Marmara University, Istanbul, Turkey

Author note

**Funding statement.** Matúš Adamkovič was supported by APVV-20-0319; Robert M. Ross was supported by Australian Research Council (grant number: DP180102384) and the John Templeton Foundation (grant ID: 62631); Zoltan Kekecs was supported by János Bolyai Research Scholarship of the Hungarian Academy of Science; Mahmoud Elsherif was supported by Leverhulme Trust; Glenn P. Williams was supported by Leverhulme Trust Research Project Grant (RPG-2016-093); Ivan Ropovik was supported by NPO Systemic Risk Institute (LX22NPO5101); Krystian Barzykowski was supported by National Science Centre, Poland (2019/35/B/HS6/00528); Gabriel Baník was supported by PRIMUS/20/HUM/009; Patrícia Arriaga was supported by Portuguese National Foundation for Science and Technology (FCT UID/PSI/03125/2019); Monika Hricová was supported by VEGA 1/0145/23.

**Acknowledgement.** We thank the suggestions from the editor and two reviewers on our first and second proposals. CB would like to thank Tyler McGee for help with data collection. PB would like to thank Liam Morgillo for help with data collection.

Correspondence concerning this article should be addressed to Sau-Chin Chen. E-mail: [csc2009@mail.tcu.edu.tw](mailto:csc2009@mail.tcu.edu.tw)