

<b>Institution:</b> Edge Hill University		
<b>Unit of Assessment:</b> A4 - Psychology, Psychiatry and Neuroscience		
<b>Title of case study:</b> Identifying the role of implicit communication and cognition in decision-making to inform international policy and practice on the psychology of sustainability, racial inequality and communication		
<b>Period when the underpinning research was undertaken:</b> 2013-2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b> Professor Geoffrey Beattie Dr. Laura McGuire Dr. Motonori Yamaguchi	<b>Role(s) (e.g. job title):</b> Professor of Psychology Research Fellow SL 2013-16; Reader 2016-19.	<b>Period(s) employed by EHU:</b> July 2013-present July 2017-present October 2013-June 2019
<b>Period when the claimed impact occurred:</b> 2014-2020		
<b>Is this case study continued from a case study submitted in 2014?</b> N		
<p><b>1. Summary of the impact</b> Research at Edge Hill University (EHU) funded by the British Academy, Unilever and EHU, focusing on implicit communication and cognition, has made a significant contribution to both public and professional understanding of the role of implicit processes in decision-making and behaviour in three areas. Firstly, in improving understanding of the nature and role of implicit nonverbal behaviour in communication to overcome everyday errors in misinterpretation, and to augment communicative effectiveness in domains like public service messaging and advertising. Secondly, in advancing our understanding of the role of implicit cognition in racial discrimination and how genuine implicit bias can be identified and assessed to promote equality and diversity. And thirdly in developing a new understanding of the role of implicit cognition in decision-making relevant to climate change to inform international policy and practice in this area.</p>		
<p><b>2. Underpinning research</b> <b>Beattie's</b> research on <b>implicit nonverbal communication</b> challenges the dominant model of human communication (prevalent in both the scientific literature and popular culture) of the functional separation of language and nonverbal communication (body language), and the view that everyday body language can be understood on the basis of the interpretation of static images. Beattie's research has shown that the spontaneous and dynamic hand movements that accompany talk, generated with little conscious awareness, are an <i>integral</i> part of speaking and convey core parts of the underlying semantic message (<b>Ref.1</b>). The practical and theoretical implications of this research for the design of effective communications (including television commercials, work done in conjunction with ITV (<b>S1</b>) and the reading of psychological state, including deception and attitudinal dissociation) are outlined in <b>Ref.2</b>. This approach to multimodal discourse, involving interlocking verbal and nonverbal elements, has been used to analyse the social media posts/images/films of trophy hunters in order to dispute their claims about the motivations behind trophy hunting (Beattie, 2019, '<i>Trophy Hunting</i>', Routledge) (<b>S2</b>). In the past decade, there has been growing awareness of the possible role of <b>implicit bias</b> in employment decisions given that employment statistics reveal that certain racial groups are significantly underrepresented at higher grades within many organisations, including universities. Research at EHU has explored the connection between the two systems of cognition (explicit and implicit) in decision-making in more detail. This is outlined in Beattie's book '<i>The Conflicted Mind</i>' (Routledge 2018). The research has demonstrated how underlying implicit attitudes to race can affect visual attention to the more negative aspects of CVs of individuals from certain racial groups to influence the more 'conscious' shortlisting decision. Beattie's research with <b>Yamaguchi</b> has also shown that the principal measure of implicit attitudes, the Implicit Association Test (IAT) is not genuinely implicit because it depends on an explicit categorisation to various racial categories, so a new multi-attributes IAT (or m-IAT) has been developed to shape this field in the future (<b>Ref.3</b>). The new test, which still demonstrates a race bias, is more theoretically defensible and is likely to become of major practical importance in this area (<b>S3</b>). The research of Beattie and <b>McGuire</b> has aimed to identify <b>psychological barriers to climate change mitigation</b>. These include a range of cognitive biases in the processing of climate change messages, including optimism bias (<b>Ref.4</b>), and implicit attitudes to low carbon products that are dissociated from self-reported attitudes (<b>Ref. 5</b>). Many climate change campaigns and initiatives are based solely on (socially desirable) measures of explicit attitude. However, using eye-tracking, our research has demonstrated that positive implicit attitudes rather than explicit</p>		

(self-report) attitudes often predict visual attention to carbon labels on products in the short time frame required for making a consumer choice, as well as the choice of low carbon products themselves (**Ref.5**). This might help explain why so many government and commercial initiatives have failed and that we do need a new model of consumer decision-making (**S4**). Importantly, their research has also demonstrated that it is possible to change implicit attitudes to carbon footprint, using emotion-based film material, and that changes in low carbon preferences are maintained at least over the short-term (**Ref.6**). This might hold the key to successfully changing behaviours relevant to climate change. New research funded by EHU is testing the modifiability of implicit attitudes in children through education programmes both in the U.K. and in the UAE.

### 3. References to the research

1. Beattie, G., Webster, K. & Ross, J. (2014) Do speakers really unconsciously and imagistically gesture about what is important when they are telling a story? *Semiotica*, 202, 41-79. doi: [10.1515/sem-2014-0033](https://doi.org/10.1515/sem-2014-0033)
2. Beattie, G. (2016). *Rethinking Body Language: How Hand Gestures Reveal Hidden Thoughts*. Routledge: London.
3. Yamaguchi, M., & Beattie, G. (2020) The role of explicit categorization in the Implicit Association Test. *Journal of Experimental Psychology: General*, 149, 809-827 (online: 2019). doi: [10.1037/xge0000685](https://doi.org/10.1037/xge0000685)
4. Beattie, G., Marselle, M., McGuire, L. & Litchfield, D. (2017) Staying over-optimistic about the future: uncovering attentional biases to climate change messages. *Semiotica*, 218, 21-64. doi: [10.1515/sem-2016-0074](https://doi.org/10.1515/sem-2016-0074)
5. Beattie, G. & McGuire, L. (2015) Harnessing the unconscious mind of the consumer: How implicit attitudes predict pre-conscious visual attention to carbon footprint information on products. *Semiotica*, 204, 253-290. doi: [10.1515/sem-2014-0079](https://doi.org/10.1515/sem-2014-0079)
6. Beattie, G. & McGuire, L. (2020) The modifiability of implicit attitudes to carbon footprint and its implications for carbon choice. *Environment and Behavior*, 52, 467-494 (online: 2018). doi: [10.1177/0013916518808571](https://doi.org/10.1177/0013916518808571)

References 1,3,4,5,6 are published in rigorously peer-reviewed journals of international standing. *Semiotica* is the official journal of the International Association for Semiotic Studies (publishing Chomsky, Goffman, Ekman etc). *Rethinking Body Language* presents new empirical data as well as a broad new theory of body language and its applications (34 citations).

### 4. Details of the impact

#### Pathways to impact:

- **Widespread international public engagement.**

These topics are all directly relevant to people in their everyday lives, and we need to change public understanding of these issues. With regard to **nonverbal communication**, people over-interpret nonverbal behaviour based on poor science and best-selling books on body language. **Beattie** has used diverse international public-media platforms encompassing traditional science-based communications, including books (**Ref.2**), television and radio interviews, podcasts, articles in *The Conversation* (**S5**) with widespread subsequent distribution, Gresham College lectures (**S6**) etc. and Arts-based communications including a Hollywood film and a novel (**S7**) to attempt to correct this. Similarly, **with implicit cognition and climate change** Beattie has used books (**S8**), articles and high profile national/international presentations (**S9**), including a series of presentations for the British Academy (2018 Summer Showcase and B.A. events at the Latitude and Shambala festivals), to improve public understanding of the psychological barriers to climate change. Books by Beattie act as research syntheses of the work and spell out the practical and societal implications in an accessible style.

- **Consultancy:** Beattie acts as a consultant to various international organisations, including the Leadership Vanguard established by the CEO of Unilever (**S4**), the Born Free Foundation (**S2**), the Institute of Practitioners in Advertising (**S1**) and Pearn Kandola, the leading U.K. equality and diversity consultancy firm (**S3**), to inform professional practice and through this consultancy to impact on government policy in the U.K. and overseas (**S2**).

- **Membership of core international committees:** including the new U.N.-based International Panel on Behavior Change (IPBC) which meets at the U.N. in Paris (UNEP) in order to influence approaches and policy on behaviour change globally. **Beattie** is a

member of both the Scientific Committee and the Media Committee of the IPBC, and the U.K. Referent for the Media Committee (**S10**). **McGuire** sits on the Ethics Committee. Beattie also acts as a counsellor on the International Interdisciplinary Environmental Association (IIEA) and is a member of the International Advisory Board of the Japanese research organisation and think-tank 'The International Academic Forum' (IAFOR) to advise both organisations on global developments in sustainability.

### **Reach and significance of the impact.**

#### **1. Very broad public engagement with major international reach.**

##### **i. Implicit communication: Nonverbal behaviour.**

Beattie's analysis of Jose Mourinho's body language for BBC Sport (October 2015) had 1 million hits in the first week, according to official BBC figures (**S6**). Analysis of Obama and Putin's body language for Russia Today in 2014 had 43,000 hits on YouTube (**S6**). His analyses of Trump's body language in *The Conversation* were reprinted in *Newsweek*, *The Independent*, EuroNews (with coverage of 430 million homes in 166 countries), the Sydney Morning Herald, The Age (Australia), India's Business Standard, the Canberra Times etc. Beattie has over 260,000 reads of his *Conversation* articles (**S5**). He was also interviewed by the BBC World News, BBC in Washington, Russia Today, Russia's Central Television Programme, the Canadian Broadcasting Corporation, the 6 o'clock Show (Ireland), BBC Northern Ireland, BBC 5-live and BBC Breakfast (on numerous occasions). There have been feature articles about this work both in the UK and overseas (including the TES and the psychology magazine Charaktery in Poland), and interviews in the Radio Times, the Sun, the Irish Sun, the Times, the Daily Express etc. Beattie was a consultant and on-screen contributor for BBC Bitesize in 2019 on a campaign aimed at younger teenagers on 'Healthy Relationships' (**S6**). He made four films for the campaign, all around body language. The campaign paralleled 'Love Island' and involved several contestants from the show. This has been used as a teaching resource in various schools and colleges. With his novel '*The Body's Little Secrets*' Beattie was described by Professor Marcel Danesi from the University of Toronto in a review in *Semiotica* as 'Umberto Eco's successor, displaying an uncanny and ingenious ability to blend his insightful work on nonverbal semiotics with an exceptional sense for narrative' (**S7**). A major Hollywood studio (AGC) has optioned two of Beattie's books for a film. Beattie will act as Executive Producer and has worked on the script, which is now complete. His research on the connection between nonverbal behaviour and speech has informed the dialogue and the interaction throughout, turning analysis into effective reproduction. Beattie gave an invited keynote at the EffWorks Global Conference for the IPA in October 2020. The American Advertising Research Foundation shared the content with its members in the U.S.; the Shanghai International Advertising Festival Group shared the content across China and other Asian markets.

##### **ii. Implicit cognition: sustainability, climate change and race.**

The Chinese and Portuguese rights of '*The Psychology of Climate Change*' have already been sold, but the publisher reports that there is serious interest in acquiring the Turkish, German, Korean, Arabic, Romanian, Serbian, Italian and French rights (**S8**). The book identifies cognitive and emotional barriers to climate change mitigation and what is missing in current climate change campaigns. It was selected by *The Bookseller* in conjunction with UCL as one of the ten 'essential environment reads' in their Academic Book week campaign in March 2020. Beattie was selected by the British Academy to present his research on 'optimism bias and climate change' at their Summer Showcase 2018 ('to showcase the outstanding work we support across our disciplines'). He made a podcast for the Anthill on waste and gave a lecture at the Museum of London in September 2019 on behalf of Gresham College on 'How to prevent a climate catastrophe'. He talked at the Latitude (2019) and Shambala (2018) festivals on this theme and gave a keynote on climate change at the National Geographic Science Festival in Rome in November 2020. Aviva Investors Magazine did a major article on Beattie's work on the psychology of climate change in 2020. Its readership is select but very influential, numbering 120,000. Beattie made a presentation to a group of Russian journalists on a U.K. press tour in March 2020 on the psychology of climate change/climate politics (organised by Reuters and sponsored by the British Embassy in Moscow). He was also invited to present a paper on 'How to Avoid a Climate Catastrophe' at a cultural festival organised by the British Embassy in Moscow (*Different Ever After*) in October 2020 (**S9**). In the words of the festival organisers 'The festival programme brings together the best of contemporary British practices in the fields of science, innovation, sustainable development, arts and culture, which are driving long-overdue transformations in our society.' Beattie was also



invited to write an article for the Russian press, 'Truth and Myths in Climate Change' which was widely circulated in the Russian media. The Chinese rights of '*The Conflicted Mind*', which covers the research on implicit racial bias, has been acquired by China Renmin University Press. A piece by Beattie on BLM and implicit attitudes in *The Conversation* had 33,451 reads and was republished in Science Alert, National Interest and Yahoo News.

## **2. Informing international policy and practice on the psychology of sustainability, race and communication.**

**i. Leadership Vanguard:** The Leadership Vanguard (LV) is a global initiative instigated by Paul Polman, (then) CEO of Unilever to identify, support and mobilise future-fit leaders. The L.V. includes Unilever, MasterCard, Woodside, Singapore's Economic Development Board, Ericsson, Energias de Portugal and the International Committee of the Red Cross. Beattie's input into the L.V. on implicit cognition and decision-making (**Ref.5**) through his consultancy work has led to new developments in their thinking about how to encourage people to make more sustainable choices, including the development of a mobile app to help people lower their carbon footprint ('Smallfoot'). The L.V. program has now evolved into an accelerator format, identifying start-ups and initiatives that can benefit from connections with the international companies involved and the significant resources of these companies. The Programme Guide and Facilitator of the L.V. has identified the following specific start-ups as benefitting from Beattie's input (**S4**):

**a.** A collaborative project with **Simusolar**, a social enterprise that aims to improve access to productive assets in rural Tanzania, by using MasterCard's knowledge of finance and Unilever's knowledge of distribution to provide and expand farmers' and fishermen's access to affordable credit (simusolar.com).

**b.** A collaborative project with two start-ups from Bangalore - **TrashCon**, a technology-first company that works to solve India's waste challenges, and **Vogo**, a dockless scooter company to solve their mobility challenges (trashcon.in & vogo.in).

**c. Future Fit Companies:** a new way to measure companies based on their entire effect on society, communities and the planet rather than just value for shareholders. This project became a collaboration with the Future-Fit Foundation (futurefitbusiness.org.).

**ii. International Panel on Behavior Change (IPBC):** Beattie and McGuire are both members of the new IPBC which meets at the U.N. in Paris (UNEP), and is chaired by a member of the IPCC. It aims to collect and integrate knowledge and evidence on environmentally-related behaviour change and to issue state-of-the-art reviews and reports articulating and highlighting the latest effective science, and to disseminate this widely. Beattie is on the Scientific and Media Committees, McGuire sits on the Ethics Committee (**S10**). They have also contributed to the U.N. 'International Commission on Education for Sustainable Development Practice report' issued every ten years to define priorities in sustainable development education. Beattie sits on the Executive Board of the IIEA to influence international scholarship and practice with regard to sustainability and is a member of IAFOR's International Advisory Board to advise on global challenges. He is also a member of the Advisory Board for the Taylor & Francis Sustainable Development Goals Online Collection. Beattie and McGuire also contributed to a report of expert views commissioned by the Parliamentary Office of Science and Technology (POST) for the Secretary of State for the Department for Business, Energy and Industrial Strategy (BEIS) and Minister for COP26 to identify principles and priorities for COP26 (Beattie and McGuire both remain on the POST COP26 Expert Database).

**iii. Born Free Foundation.** Beattie has acted a consultant to the Born Free Foundation on the psychology of trophy hunting. His report was published by Routledge as '*Trophy Hunting: A Psychological Perspective*' and was shortlisted for the 2019 Taylor & Francis Outstanding Book and Digital Product Award in the Outstanding Professional Category. Beattie considered a range of relevant issues from the evolutionary perspective and 'inclusive fitness', to personality and individual factors like narcissism, empathy, and the nonverbal behaviour of hunters posing with their prey (**Refs 1 & 2**). Beattie made connections between a variety of indicators of prestige and dominance, showing how trophy hunting is inherently linked to a desire for status. This has enabled Born Free to debunk claims made by proponents of trophy hunting relating to their motivation, which in turn has significantly enhanced Born Free's calls for change at a policy level to limit, and ultimately bring an end to, the activity. This research has already been cited in Born Free's approaches to the UK Government in respect of its recent proposals to ban or restrict the import and export of hunting trophies, in line with its manifesto promise to introduce such

restrictions. Born Free have also cited the work in their approaches to the South African authorities in an effort to bring an end to the practice of 'canned hunting' in that country, including during presentations to the South African Government's High-Level Panel on Wildlife Management (S2).

#### iv. Combatting racism in organisations.

The consultancy firm Pearn Kandola works on equality and diversity with many of the world's largest and most successful organisations including the BBC, Citibank, HSBC, Molson Coors, Sony Pictures International, Vodafone, as well as the Cabinet Office, the Foreign Office, HM Treasury, the Home Office, the Ministry of Defence; non-governmental clients include the World Bank and the IMF. The Senior Partner and Co-founder of Pearn Kandola reports (S3) that in training workshops they make direct reference to Beattie's research on implicit racial bias 'many times a week to hundreds (and occasionally thousands) of people'. He also states that Beattie's research informs their work in the advice that they give to those working in HR, Diversity and Inclusion as well as to senior leadership teams. He also says that Beattie's research 'has enabled us to examine race bias and to create indicators which detect its presence in behaviours and decisions. We also have a strategic framework for reviewing an organisation's approach to diversity and inclusion and Professor Beattie's work is embedded within this.' He goes on to say that Beattie's research has helped organisations to improve their recruitment and selection processes, 'in particular by showing them how minorities are subject to greater scrutiny than white candidates.' With regard to Beattie and Yamaguchi's newly developed m-IAT (Ref.3), he says 'we apply this learning directly to our work, helping clients to understand when, where and how techniques such as the IAT are best used.'

#### v. Implicit communication and messaging.

The Founder of the Cassidy Media Partnership (and Former Board Director of 'The Marketing Society' and former Marketing Director FTSE 100 company) corroborates how Beattie's research on nonverbal communication has aided the design and evaluation of television commercials. She also outlines the impact of his keynote at the EffWorks Global Conference in October 2020 which explored decision-making, community, fundamental values and information-processing and how brands could start addressing how consumers think in this regard. She writes 'His presentation was received extremely well and I know that it inspired new thinking and new approaches in the industry internationally.' Beattie's research which conclusively demonstrates that body language is dynamic and central to the communication of meaning through its close connection with verbal language (Refs.1 & 2) has now fed into popular culture (and best-selling books on body language) correcting dangerous myths, and is now well cited in broad-based books on applied behavioural analysis e.g. Susan Wallace's (2017) *Behaviour Management: Getting it Right in a Week*, which applies this new theory to educational settings, offering 'workable strategies, tips and advice for busy teachers who want to address low level disruption and improve behaviour in their classroom' and into the design of non-humanoid robots by researchers at NASA (e.g. Kim & Fong, 2013).

#### 5. Sources to corroborate the impact

S1. Corroborating statement from the Founder of the Cassidy Media Partnership, Former Board Director of 'The Marketing Society' and former Marketing Director of a FTSE 100 company.

S2. Corroborating statement from the Head of Policy, the Born Free Foundation.

S3. Corroborating statement from the Senior Partner and co-Founder of Pearn Kandola, the occupational psychology consultancy which tackles equality and diversity.

S4. Corroborating statement from the Programme Guide and Facilitator of the Leadership Vanguard, Xynteo.

S5. Link to various pieces in *The Conversation*.

S6. Link to Beattie's Gresham College lectures at the Museum of London, which has delivered lectures to the public for over 400 years, and selected television interviews.

S7. Review of the novel '*The Body's Little Secrets*' (where the plot hinges on the relationship between speech and nonverbal communication) by Professor Marcel Danesi from the University of Toronto in the journal *Semiotica* (*Semiotica*, 2019, 227, 349-351).

S8. Books and monographs on implicit communication/cognition which derive from the research and written in a broad and accessible way.

S9. Corroborating statement from the Ambassador, the British Embassy in Moscow.

S10. Links to the International Panel on Behavior Change (IPBC). <https://www.ipbc.science/>