

Institution: University of Cambridge		
Unit of Assessment: UoA 30		
Title of case study: Improving the science of well-being		
Period when the underpinning research was undertaken: 2011-2018		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Anna Alexandrova	Reader in Philosophy of Science	01.09.2011-present
Period when the claimed impact occurred: 2016-present		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact (indicative maximum 100 words)		
<p>Alexandrova's research on the measurement of well-being carried out at the University of Cambridge - via her membership of expert panels and her collaboration with non-governmental bodies - has influenced how international institutions (including NATO), professional bodies, consultancies and charities define and use forms of well-being as outcome measures. In particular, she has promoted the use of multiple indicators as a way of reflecting and respecting well-being's complex and contextual nature. Alexandrova's work has changed international policy and practice in Autonomous and Intelligent System development; influenced NATO policy for improving support for military families; and changed the way that charities in the UK and USA measure well-being.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>This impact is underpinned by Alexandrova's writings on measurement of well-being, objectivity and values in science. Although there is plentiful literature on well-being in philosophy, it has come for the most part from ethics and political philosophy. Alexandrova, on the other hand, has formulated these issues using concepts from philosophy of science and in this respect she has pioneered analysis of well-being as an object of scientific study [R1].</p> <p>Alexandrova published eight journal articles and five chapters in edited volumes while at the Department of History and Philosophy of Science, Cambridge, between 2011 and 2016, culminating in a 2017 monograph <i>A philosophy for the science of well-being</i> [R5]. This book presents a case for retaining a plurality of well-being indicators against the prevalent search for one true measure, and for validating these measures in ways that meet the demands of scientific objectivity as well as justice and respect [R4]. Because scientists' identities are often bound up with the ideals of value-freedom and neutrality, a responsible and systematic approach to well-being does not come naturally and necessitates a change of culture in these disciplines.</p> <p>For example, in psychometrics the dominant model of validation of well-being measures – construct validation - outsources important value-laden questions to statistics and other technical tools such as factor analysis. Alexandrova argues that these practices undermine the ability of this research to provide credible justifications of well-being research. Instead she urges an intentional and explicit commitment to theory building, providing an example in the case of child well-being [Chapter 3 of R5]. In joint work between 2012 and 2015 with US public health scientist Ramesh Raghavan [R3] Alexandrova has argued that child well-being deserves its own definition and measures, distinct from the definitions and measures used for adults, and that this definition needs to attend to the importance of play, exploration, and attachment, rather than only those outcomes that predict adult flourishing. Alexandrova's pluralism regarding well-being indicators, and her application of these arguments to child well-being, have influenced policy and practice of charities and governance bodies that work with vulnerable children (see 4.2).</p>		

A related theme in her work is the need to incorporate ethical values in cost-benefit analysis and economic evaluation, arguing for the importance of respecting priorities of individuals and publics in policy and decision-making, and pointing out aspects of current practices that make this difficult [R2]. She has used some of these ideas to defend the status of well-being indicators against sceptics, but more recently she has also assumed critical goals. In particular she has argued that some approaches to evidence-based well-being policy in the UK adopt a technocratic and centralised vision according to which well-being is a monistic quantity that can be manipulated with policy levers, without regard for local context, or for the legitimacy of these policies in the eyes of the people they affect [R6]. Alexandrova's case for incorporating ethical values in outcome evaluation has helped to change the way that a number of UK charities measure the impact of their work with young people.

3. References to the research (indicative maximum of six references)

- [R1] Alexandrova, A. (2012). Well-being as an object of science. *Philosophy of Science*, 79, 678-689. [\[DOI\]](#)
- [R2] Haybron, D. M., and Alexandrova, A. (2013). Paternalism in economics. In C. Coons and M. Weber (Eds.), *Paternalism: Theory and practice* (pp. 157-177). Cambridge University Press. ISBN 9781107025462
- [R3] Raghavan, R., and Alexandrova, A. (2015). Toward a theory of child well-being. *Social Indicators Research*, 121(3), 887-902. [\[DOI\]](#)
- [R4] Alexandrova, A. (2016). Is well-being measurable after all? *Public Health Ethics* 10(2), 129-137. [\[DOI\]](#)
- [R5] Alexandrova, A. (2017). *A philosophy for the science of well-being*. Oxford University Press. ISBN 9780199300518
- [R6] Alexandrova, A. and Singh, R. (2018). Happiness and the truth: How to think about well-being. *Times Literary Supplement*, November 23 2018. Review of *Origins of happiness: Subjective well-being through life course* by Andrew Clark et al, Princeton UP, 2018. [\[Link\]](#)

Outputs R1, R3, and R4 passed peer review in their respective journals. Outputs R2 and R5 were published with major academic presses. R6 was not published with an academic publisher but was developed from research undertaken for other outputs listed e.g. R2 and R5. Therefore, the research that underpins each of these outputs, and that underpins the impact detailed in section 4, meets the 2* threshold.

4. Details of the impact (indicative maximum 750 words)

The high academic profile and the interdisciplinary nature of Alexandrova's work has created opportunities to apply her research to two practical problems: choice of outcome measures and responsible practices for defining well-being. Alexandrova's research has helped a number of organisations tackle these two problems, with impact in the international technology industry, local and global charity work, and NATO policy.

4.1 Outcome measures for Autonomous and Intelligent Systems developers

In 2017 Alexandrova advised the Well-being Committee of the Institute of Electrical and Electronic Engineers (IEEE – the world's largest professional association for electronic engineers) for their *Global Initiative on Ethics of Autonomous and Intelligent Systems (A/IS)*. The goal of that committee was to introduce well-being metrics to A/IS developers – a community estimated to number almost 500,000 over 160 countries [E2] – and to make a case for using these metrics to evaluate impact of A/IS technologies. Alexandrova argued in favour of retaining a rich set of multiple conceptions of well-being and drafted the relevant sections of the Ethically Aligned Design, First Edition (EAD1e) report, drawing explicitly on her own earlier research.

The significance of Alexandrova's influence on the document has been confirmed by the Executive Director of this initiative. He refers to Alexandrova's book [R5] as the justification

for recommending to A/IS developers a library of well-being indicators to be used with judiciousness and respect for context:

'I note in particular that the views you defended in your book *A philosophy for the science of well-being* influenced the direction we took in our document, that is emphasizing that there is no single best measure and concept of well-being, but different ones (often in unison) are appropriate depending on context. This is a valuable and distinctive aspect of our report that would not have been there without your input.' [E1]

This document has now been published and is gaining influence elsewhere in the technology community. The Executive Director's letter confirms that at the date of his writing (Dec 2018) EAD1e had been mentioned in dozens of academic documents, in AI-oriented policy from the UK and EU, and publications from corporations such as IBM. It had also influenced the creation of 14 Standards Working Groups, including a new IEEE working group focussing explicitly on well-being issues directly related to EAD1e. [E1]

The importance of the document is affirmed by users from IBM, OECD, the VETRI foundation, and NGO People Centred Internet [E2]. A member of staff from AI Design Practices, IBM, has commented that 'As an AI designer and AI ethics advocate at IBM, I'll be using *EAD1e* in scaling best practices for thousands of designers and developers. The guidance materials coming out of this will help our teams re-evaluate their current design and development processes. It's vital to bring in different perspectives whenever we make decisions on what is or isn't ethical – IEEE's focus on interdisciplinary collaboration makes this work accessible to anyone working with AI.' [E2]

4.2 Child well-being and NATO

The prominence of Alexandrova's research on child well-being [e.g. R3] has resulted in multiple positive citations of this work in the NATO Science and Technology Organisation report *Impact of military life on children from military families*, a blueprint for improving programs and support for military parents and their children [E3]. The report asserts that its results will, 'assist the military organizations and services providers in identifying the most effective ways of providing support to children to adapt and cope with the demands of a military lifestyle'. The framework that NATO has developed for this draws explicitly on Alexandrova's research with Raghavan.

Alexandrova's research on child well-being has also influenced definitions of well-being used by child-protection professionals. Her research set the framework for a stakeholder symposium held at Washington University in St Louis, including among other organisations Vision for Children at Risk, a local community organisation. One of the consequences of the symposium was a new definition of child well-being adopted by Vision for Children at Risk, which incorporated Alexandrova and Raghavan's suggestion that child well-being includes the ability to relate to the world as children [E4]

4.3 Measuring outcomes with young people

In 2019 Alexandrova was contacted by Centre 33 to collaborate on a project to improve the organisation's outcome measurement. Centre 33 is a young people's charity that works with over 2000 young people annually across Cambridgeshire and Peterborough offering free support regarding mental health, homelessness, and young carers [E5]. As a result of Alexandrova's work, Centre 33 have paid closer attention to non-qualitative outcomes that can be used to capture the effects of their work that would not otherwise be measured. As stated in a testimonial letter from Centre 33: 'Anna's research provided an important and incredibly helpful tool for us to critically evaluate our own outcomes, as well as explore new ones' [E6]. Further collaborative work between Alexandrova and Centre 33, which aims to

build a bespoke outcome measurement tool for the organisation's youth work, will be undertaken later in 2021.

4.4 Responsible practices for defining well-being

Alexandrova is regularly asked to speak to non-academic audiences about the importance of a pluralistic approach to well-being. For example, in May 2020 she spoke to 953 attendees at a WHO Health and Culture Webinar on the role of culture in defining well-being [E7]. She has also acted as a consultant on well-being measurement for non-academic organisations. In 2018 Alexandrova contributed to the work of US health and well-being consultancy the Metropolitan Group (MG). One of MG's regular clients is the Robert Wood Johnson Foundation (RWJF) – the US's largest philanthropic organisation dedicated solely to health – which contracted MG to develop a global well-being research and action strategy. The Vice President at MG, commented: 'Anna's views on the necessity of maintaining multiple indicators of well-being informed our thinking about the agenda for and participants in a convening we were planning [for RWJF]. We especially appreciated her perspective on the need to root decisions in local context and to supplement cost-benefit analysis with well-being data.' [E8]

Metropolitan Group have since implemented these insights in their work with RWJF to convene 'global leaders to explore how to make well-being the driver for policies' [E9]. The RWJF conference included government advisors, NGO and think tank directors, and researchers from the OECD and the WHO [E7], and the resulting report reflected Alexandrova's advice that local cultural context is essential to the design of valuable well-being measures (one of four main considerations highlighted in the report [E10]).

5. Sources to corroborate the impact (indicative maximum of 10 references)

[E1] Testimonial from the Executive Director of the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems (19 Dec 2018)

[E2] Testimonials from Milena Pribic, IBM, Doug Frantz, OECD, Monique Marrow, VETRI Foundation, and Mei Lin Fung, People Centred Internet. All in screenshots taken from the IEEE website (dated 14 October 2019)

[E3] NATO/Science and Technology Organization. (2019). *Impact of military life on children from military families*. R3 is cited on p.24 (1-8), p.25 (2-1), p. 48 (2-24), and p. 192 (7-22), [\[Link\]](#)

[E4] Statement developed by the St. Louis Child Well-Being Symposium steering committee, organised by Vision for Children, 2014.

[E5] Webpage: Centre 33 homepage at Virgin Money Giving. [\[Link\]](#)

[E6] Testimonial from Centre 33 confirming the contribution of Alexandrova's research to their work to improve their outcome measurement.

[E7] Webpage: WHO Culture and Health webinar series 2020 – Thriving: the role of culture in defining and advancing well-being. Alexandrova listed as speaker. [\[Link\]](#)

[E8] Testimonial from an Executive Vice President of Health, Metropolitan Group

[E9] Metropolitan Group. (2019). *30 years of impact: 2019 annual letter to stakeholders*. p.3

[E10] Robert Wood Johnson Foundation conference summary: *Advancing well-being in an inequitable world: Moving from measurement to action*.p.5 [\[Link\]](#)