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# Mixed Methods and Cross Disciplinary Research

Towards Cultivating Eco-systemic Living

 Springer

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Leaves and organic matter at Mount Lofty, Adelaide, South Australia, McIntyre-Mills, J, Sept, 2017



Melting ice flows near Casey Station in the Antarctic on 30 January 2018 taken by Michael Rook from a Qantas route to South Africa

# Transcript of Key Note Address on Mixed Methods and Transformative Approaches to Social and Environmental Justice

Sharlene Hesse-Biber  
Boston College, Boston, MA, USA

MMIRA Regional Meeting  
Flinders, Australia  
Keynote Presentation  
December, 2017

## [Hesse Biber Podcast, Flinders \(2\).mp4](#)

**Interviewer:** Hello, everyone. I have here with me Dr. Sharlene Hesse-Biber; she is a Professor of Sociology and the Co-director of the Women and Gender Studies Department at Boston College. Today, I will ask her a few questions about her vision for using mixed methods to shed light on transformative approaches to social and environmental justice.

**SHB:** Thanks. It's my pleasure to speak with everyone today at this symposium, and I'm really sorry I can't be with you today. But I consider it an honor that you have given me the opportunity to speak here in this podcast.

**Interviewer:** Dr. Hesse-Biber, could you share a little about your career in mixed methods at this point?

**SHB:** Yes. I was thinking about this, and actually, I was doing mixed methods as a grad student at the University of Michigan. In a study that I did of white attitudes towards black people in their neighborhood based on an open housing petition, if we knocked on their door a week later and asked them if they would sign this petition. And at the time, I thought that using these methods was incredible. So we could get at different kinds of questions. And I want to fast-forward that today to the more formalized approach to mixed methods, where we think very much in terms of designs. One of these methods is a qualitative approach, and with it another quantitative approach, in a sequential or a concurrent way. And it seemed to me that we were getting really caught up in design-centric understanding of the problem. The design first and sort of the problem, followed later. And my thinking was, we're

putting the cart before the horse. And I really was very concerned about that. And my thinking, really, is that we need to get away from this method-centric approach and really begin to think about centering the problem or set of problems in mixed methods, research inquiry. And if we step back from a focus on methods and we really turn towards, what is it that we want to know? What is the set of issues that are front and center for this research project? And my philosophy, Sara, is that I want to use any method I can to help me get out the question or set of questions. But also in focusing on problem-centered, what I call the context of discovery of a research process, is to understand that we are asking the questions that need to be asked. That we're asking questions across a variety of different stakeholder's concerns. And this is especially true when we're dealing with complex environmental issues. Whose problems are at the table? And whose problems are subjugated? And my concern is that we rush towards the method thinking that's our magic elixir; that's what's going to get us the answers to these problems. And we really, really don't try hard to get at subjugated knowledge of those people. For example, in the environmental research and environmental social justice, the most marginalized are impacted, yet their problems, their issues don't ever seem to make it to the stakeholder table. So, those are the kinds of things I think that are driving my current interest in mixed methods. I've been in this field for at least 15 years, and I see over and over again that individuals whose problems are central get left out. So, in thinking about this symposium today, I really feel that we're getting at those stakeholders. We're getting at those issues that also involve crossing borders, as I will speak about later, crossing disciplines.

**Interviewer:** So, how did your approach to mixed methods align with the values of social and environmental justice which this symposium is centered on today?

**SBH:** Well, my concern is that we're facing such difficult environmental issues, and issues around the environment that marginalize and subjugate the voices of those so impacted by environmental problems: women, children, and other marginalized populations. And so, my goal really is to get at, to bring these voices back into our understanding and the ways in which we need to begin to transform the environment towards social justice issues. And for me, the most important thing in centering the concerns and issues of those that are most impacted. And what I would call the standpoint approach. This involves asking a different set of multiple questions. So again, asking and putting those most impacted at the center of our understanding of environmental justice really requires us to ask a different set of issues to bring these individuals to the table of research, and begin where they're at. And I really feel, by focusing and problematizing first, we can better meet the needs of those most impacted.

**Interviewer:** So again, you emphasized this problem-centered approach to mixed methods research design, particularly for understanding these kinds of complex social justice issues. Could you talk a little bit more about why you feel it is important to center the research problem?

**SHB:** Well, as I said, I think we get caught up in noting that mixed methods is better than any other way of doing things; two is better than one. And really, my concern is that the problem gets lost. If we are talking about, you know, deep and complex environmental problems, we're asking many different types of questions that span many different disciplines. And my concern is how do we begin to center the problem and then talk about crossing problematic borders. I mean environmentalists have a set of problems; geographers have another set of problems; those impacted yet have another set of issues, and questions, and problems. So how can we begin to bring all of these stakeholders to the table to figure out and sort out the range of issues and problems out there? And how can we begin to cross borders and find ways of addressing these complex issues through cross-border work, through interdisciplinary research? These are the kinds of things we need to focus on, and the methods will really follow. We may use many different methods. We may use design templates nobody ever knew about. But still, we're doing it and the service of the range of questions. And while we cross questions, we also cross paradigmatic borders. Qualitative approaches will ask about lived experience. Quantitatively driven approaches will ask how much, how many, will do more hypothesis testing. And it's not that one is better the other, but in combination, we're weaving these issues together and trying to understand these wicked problems that are out there with regard to the environment.

**Interviewer:** Thank you. Could you share some insights on weaving multiple methods into research?

**SHB:** Right. I think there's been a lot of emphasis on integrating mixed methods, and I'm really not sure what we mean by that. I like to think of us taking a kind of mixed model approach where we have a set of questions that are talking to one another. Really, we're weaving a tale of how to figure out what's happening out in the environment, how to get all those stakeholders together. It's not kind of melding things together, but weaving and talking. This idea of weaving voices together not so much in competition with one another but with the goal of complex understanding of meaning. I also like the idea of crossing boundaries; weaving and crossing borders is a way to get at the range of issues out there and to try to understand complex ways of dealing with these issues. So, the kind of weaving approach seemed to me that we're weaving a text; we're weaving a beautifully colored set of issues that are not just a one-size-fits-all solution. At the local level, there are so many differing issues and problems that we need to privilege this kind of weaving and bobbing of problems and finding solutions that are multiple at different levels, at the micro-level, at the meso-level, and at the macro-level. And so, it's not so much triangulating necessarily but expanding our understanding the complexities that are out there. So, this metaphor of weaving or crossing borders, to me, is the beginning of trying to understand and get at some of the issues this symposium today and for the rest of the time in both Flinders and in West Java that we're trying to get at in general.

**Interviewer:** So, you mentioned with an interdisciplinary approach to mixed methods research. Why do you feel this is important, in particular, with topics of social and environmental justice?

**SHB:** Well, the environment is a complex whole. And it's both biotic and abiotic environment; there are many actors in this environment that need to be brought to the table; there are many disciplines as I mentioned before. We have geographers, we've got folks in sociology, we've got folks that are environmentalists, and each has a set of questions that is very much based in their own disciplinary silo. And if we're going to really get at the full range of issues and questions, we really need to break out of the silo thinking, and we need to begin to listen to each other's set of issues, concerns, and problems. Trying to cross disciplinary borders is very hard. And so, I think learning first how to communicate with each other before we start setting up designs and trying to get at findings, we want to make sure that we are clear where each other is coming from, what we can contribute, and what we really need to do is listen to each other's differences. Crossing borders is not easy, and I think there's a lot of need to understand how we do interdisciplinary work rather than talking past one another. We still have a lot of work to do in communicating the problems that we're bringing to the table and making sure we look at a different set of issues at all these levels, the microlevel, meso, and macro-level. And mixed methods has a role to play, but if we focus just on design or we focus on the fact that mixed methods is this magical elixir, this fairy dust, that we sprinkle on and something wonderful is going to happen, then I think we lose our way. And I think it's hard, we always want to rush to do the analysis. But if we don't have the right set of questions at the table, you could have a great design, but in the end, it's not going to help you.

**Interviewer:** Thank you, so we are coming to the end of our time here. I wonder if you have any final thoughts moving forward with the symposium today?

**SHB:** Well, I am excited that the organizers have brought together some of the most unbelievable folks, who together, I think, share a vision of complexity. And at all the levels, I think they share the vision of listening to the other. They are intersectional, they understand that multiple players are impacted, and they understand the importance of bringing people together in a shared interdisciplinary community of listening to each other. I just want to say thank you again for giving me the opportunity to speak today. I hope all of you enjoy the rest of this symposium.

# Preface: Transformative Mixed Methods in Troubling Times

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The world is facing many challenges that are occurring at the nexus of social, environmental, and social justice. In this chapter, I explore the transformative approach to research as one avenue for contributing to an agenda for action based on systematically collected evidence and appropriate inclusion of a broad range of stakeholders in the research process and use for addressing wicked problems. The term wicked problems is attributed to Rittel and Webber (1973) who described them as problems that involve multiple interactive systems and about which there is no certainty about the solutions. Levin et al. (2012) added the idea that wicked problems are those for which time is running out to find a solution. Examples of wicked problems include climate change, water security, access to agricultural land, sovereignty and self-determination, poverty, and violence.

Although there are some deniers of climate change, the preponderance of the evidence supports the findings of the US Global Change Research Program in its *Climate Science Special Report* in which it concludes that “it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century (2017: 10).” They based this conclusion on the review of thousands of studies conducted worldwide that documented “changes in surface, atmospheric, and oceanic temperatures; melting glaciers; diminishing snow cover; shrinking sea ice; rising sea levels; ocean acidification; and increasing atmospheric water vapor (p. 10).” Yet, even with this large body of research-based evidence, we witness the continuation of practices that are destructive to the environment—often times, in the name of economic development and job creation.

Despite the seemingly intractable nature of wicked problems, I argue that there is reason for optimism. My argument centers on the hypothesis that the adoption of a transformative stance with the incorporation of mixed methods research increases the potential for addressing critical social, economic, and environmental injustices (Mertens 2014a). My argument is based on the following characteristics associated with a transformative mixed methods approach: the use of a transformative mixed methods approach provides an opportunity to strengthen the credibility of findings because the evidence is collected from multiple sources in multiple ways, thus being

able to reflect the complexity of the phenomenon being studied. As I explain in greater detail later in this chapter, a transformative stance requires the researcher to adopt a critical cultural perspective that is reflective of a conscious awareness of differing cultural perspectives and includes the full range of stakeholders in culturally appropriate ways.

It also has an orientation toward constructive action both as a result of engaging in the process of research and in the use of the findings from that research (Mertens 2015; Mertens and Wilson 2019).

## **The Meaning of Transformation**

Transformation is multileveled; it can be both personal and social (Mertens 2017). Personal transformative moments can influence us to recognize inequities and commit to societal transformation. The meaning of transformation itself is important within the context of each research study. It helps us determine: What is accepted as the reality of transformation? This question has different answers depending on who you ask.

In Walton's (2014) description of my work and those of other transformative methodologists, she claims:

These writers are seeing transformative research as a means of achieving change at a community and institutional level. However, transformation can also take place on a personal level; and indeed the argument can be made that transformation at any level has to begin with transformation of the individual. (p. 30)

We see an emphasis on transformation of the individual in studies such as those conducted by Pratt and Peat (2014) that focuses on the transformation of a student and thesis supervisor or by Farren et al. (2015) in which they studied the transformation of teachers through the use of information and communications technology in a second language classroom. Jones (2015) described transformation in the lives of disenfranchised youth so they can transform their lives from being victims of neglect and abuse to one where they are able to flourish as a trusting young person with a positive sense of identity and self-esteem. These transformations focus on the individual level while at the same time having wider social implications.

When Indigenous people are asked about transformation, they describe the need for decolonization in terms of research methods, as well as in the form of the return of their land, resources, and freedoms that were taken from them (Cram and Mertens 2015). This is a transformation that is clearly focused at the societal level, but Indigenous people emphasize that such a transformation needs to come through building relationships among themselves and with non-Indigenous people.

However, the transformative paradigm had its impetus from concerns raised about research by members of marginalized communities who saw a great deal of research being done "on" them, yet they noted that "little has changed in the quality of the lives of people who are poor and/or discriminated against based on racial

groupings/ethnicity, disability, deafness, gender, Indigeneity and other relevant dimensions of diversity” (Cram and Mertens 2015: 94) (cited in Mertens 2018: 21). Thus, the transformative approach to research involves a synergistic relationship between personal and social transformation.

## The Transformative Paradigm

The transformative paradigm is one of the major philosophical frameworks for social science research and is based on the work of Guba and Lincoln (1989) and their development of the idea of paradigms in the social sciences being characterized by four primary sets of assumptions: axiological (value and ethics), ontological (the nature of reality), epistemological (the nature of knowledge and the relationship between the researcher and the participants or stakeholders), and methodological (the nature of systematic inquiry).

The transformative paradigm offers a metaphysical umbrella that brings together philosophical strands associated with feminism, critical theory, Indigenous and postcolonial theories, as well as disability and deafness rights theories. “The transformative paradigm is applicable to people who experience discrimination and oppression on whatever basis, including (but not limited to) race/ethnicity, disability, immigrant status, political conflicts, sexual orientation, poverty, gender, age, or the multitude of other characteristics that are associated with less access to social justice. In addition, the transformative paradigm is applicable to the study of the power structures that perpetuate social inequities (Mertens 2009: 4).”

Figure 1 provides a brief summary of the four assumptions as they are defined in the transformative paradigm.

Assumptions	Beliefs
Axiology	Cultural respect; promote social, environmental and economic justice & human rights; address inequities; reciprocity; resilience; interconnectedness (living and nonliving); relationships; we are the land
Ontology	Multi-faceted; consequences of privilege; historically situated
Epistemology	Interactive; trust; coalition building
Methodology	Transformative, dialogic, culturally responsive, mixed methods; policy change

**Fig. 1** Summary of the transformative philosophical assumptions

## **Transformative Axiological Assumption**

The transformative axiological assumption has been informed by the scholarship of social rights advocates as well as Indigenous people (Chilisa 2012; Cram and Mertens 2015; McIntyre-Mills et al. 2017; Romm 2018). The contribution of Indigenous researchers is particularly germane when looking at wicked problems that bring together the idea that “we are the land” and the implications for social, environmental, and economic justice. One example of a spiritual value from the African Indigenous community is Ubuntu, described by Chilisa (2012) as follows: Ubuntu calls upon researchers to conduct their studies with an awareness of the effects of the research on all living and nonliving things—those that come before us, those who are with us now, and those who will come in the future. With this as a guiding ethical principle, how would researchers change the way they design and conduct their research? What does this ethical imperative imply for our research methods if we want to insure that we not only address personal transformation but also contribute to action for transformative purposes at the societal level?

## **Transformative Ontological Assumption**

The transformative paradigm holds that there are many different versions of reality and that these versions come from different social positionalities. The researcher is responsible for making visible the different versions of reality and providing evidence related to the consequences of accepting one version of reality over another. Examples of different versions of reality associated with different positions of power can be found in many sectors. In Australia and Indonesia, examples come from mining and palm oil production. Indigenous people see these topics as issues that are salient in terms of land rights, prevention of pollution, protection of the coral reef and other waterways, loss of agricultural land, need to protect the forests, water security, well-being, and the need to reduce the gap between rich and poor. However, government officials and corporate interests see these topics as being connected to job creation, energy production, economic growth, and profits (Wardill 2017). There are consequences of accepting one version of the reality over the other in terms of respect for human rights and protection of the environment. These different versions of reality are associated with different levels of power, and this is relevant to the transformative epistemological assumption.

## **Transformative Epistemological Assumption**

The transformative epistemological assumption is informed by the axiological assumption that we are all interconnected and we have a responsibility to all living and nonliving things, as well as to the consequences of power inequities. It means

### Epistemology: Building Coalitions Papua New Guinea Mining

- 1967: Soeharto government signed contract with Freeport McMoRan
- Freeport's power: economic growth, job creation, taxes paid to Indonesia
- Indigenous people protested; workers went out on strike
- UN Declaration on the Rights of Indigenous People
- UN Norms on the Responsibilities of Transnational Corporations and other Business Enterprises with Regard to Human Rights
- Formalized into organizations, such as LEMASA (Amungme Tribe Council) and LEMASKO (Kamoro Tribe Council) (Soares 2004). They also forged alliances with other indigenous communities in Aliansi Masyarakat Adat Nusantara (Alliance of Indigenous Peoples of the Archipelago)
- UN Working Group on Indigenous Populations; worked with Australian Council for Overseas Aid; Established an office in Port Vila to coordinate efforts
- Lawsuit against Freeport for cultural genocide
- Freeport: Social, employment and Human Rights Policy and internal code of conduct principles; International Congress and Convention Association audit compliance; Voluntary Principles on Security and Human Rights with NGOs; signed ISO14001 environmental standards; audit PT.SGS International
- Established 1% Trust Fund; Amungme and Kamoro granted Land Rights Trust Fund – share in the mine; August 2017 – transfer majority share to Indonesia

Fig. 2 Transformative epistemology and the building of coalitions (Anonymous 2017)

that researchers need to establish an interactive link between themselves and the stakeholders that are based on cultural respect and addressing power inequities. It leads to the need to build effective coalitions. This is exemplified in the approach used in addressing the Adani Mine situation in Papua New Guinea. The chronology of events is presented in Fig. 2.

## Transformative Methodology

Transformative methodology generally involves the use of mixed methods, i.e., the use of both quantitative and qualitative methods in a single study in order to capture the full complexity of a phenomenon. Mixed methods are used to address power differentials in the stakeholder groups by providing multiple avenues for data collection that are culturally responsive. They are used to consciously give voice to the less powerful while making visible the contrasts between versions of reality as put forth between the less and the more powerful. It involves the development of cyclical, culturally responsive design that allows for appropriate engagement of multiple stakeholder groups. A major component at the beginning of a transformative mixed methods study is allowing for time to develop relationships, build coalitions, and design strategies for working together. One of the early data collection phases involves the conduct of a contextual analysis, determining levels of incidence of the problem, available data on the nature of the problem, and differences in experiences of the problem by various constituencies.

### Transformative Mixed Methods in Korea

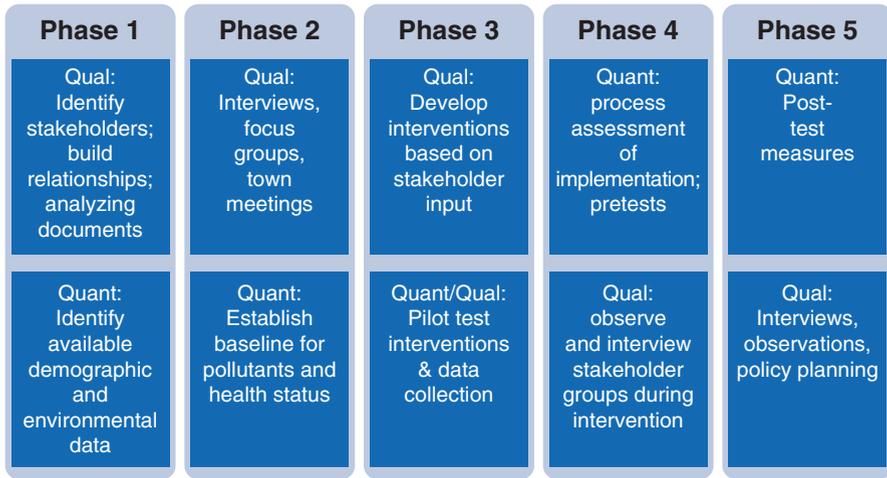


Fig. 3 Example of a transformative mixed methods design developed in Korea (Mertens 2014b)

A transformative mixed methods design was developed for use in South Korea as a way to address their social, economic, and environmental issues. This design is depicted in Fig. 3.

A mixed methods cyclical design to study the performance of Korean eco-parks within a context of furthering symbiosis, social justice, and gender equity might include several phases of quantitative and qualitative data collection (Mertens 2014b). In Phase 1, researchers need to establish who should be involved; this may include recruiting co-researchers from the communities who can serve as liaisons with groups that might be suspicious of the researchers. Dimensions of diversity that are relevant within the contexts need to be identified, and members of those communities need to be consulted in culturally appropriate ways to determine recommended ways of interacting. Documents that are relevant to the culture and the issues need to be systematically reviewed. The results of this qualitative phase of data collection can be combined with quantitative data that is available concerning demographic characteristics and environmental quality indicators. Documents concerning climate change and the evaluation of efforts to address this issue would be relevant reading.

Based on the results of Phase 1, the researchers can implement systematic data collection of both quantitative and qualitative nature to gain a better and broader understanding of the context and to establish baseline in terms of relevant variables, such as pollutants and health conditions. Information from Phase 2 can be used in Phase 3 to develop multilevel interventions that address stakeholders' concerns. The proposed intervention can then be pilot-tested through the collection of both quantitative and qualitative data. This information would be used to refine the intervention and data collection strategies. For example, in a blog composed for the

Independent Evaluation Group at the World Bank, Chomitz (2014) discusses the challenges and advantages of evaluating demonstrations and pilot projects to inform decisions about interventions:

It is not as if there were a pre-existing, clear, roadmap for economic development and poverty reduction. Now the way forward is further obscured by the need for pervasive changes in the way that we produce energy, grow food, use water, and prepare for droughts, floods, and storms. There are lots of good ideas, but not all of them will pan out as expected. What's needed, at every level from the community to the planet, is the acuity to recognise both dead ends and promising pathways as rapidly as possible... Demonstration and pilot projects—which prove technical feasibility, work out regulatory issues, and reduce perceived investment risks—can have far-reaching impacts, but are successful only when they specify what is being demonstrated to whom, why, and how. The CIF [Climate Investment Funds] evaluation found that some would-be transformative energy interventions were likely to be stymied by unfavorable national energy policies.

During Phase 4, pretests can be administered, the interventions can be implemented, and ongoing quantitative data can be collected as part of the process assessment (e.g., ongoing monitoring of pollutants and health issues). This should be accompanied by ongoing qualitative data collection to maintain contact with stakeholders and bring attention to any concerns that arise. The final phase includes both quantitative and qualitative data collection to provide evidence of the effects of the interventions at multiple levels. Societal and individual indicators can be reported, as well as activities related to the use of the information generated by the study for policy changes.

## Conclusions

This transformative cyclical mixed methods design builds on other mixed methods designs that have been used to provide evidence that facilitated changes in complex social situations based on attention to human rights and social justice (Chilisa and Tsheko 2014; Mertens and Wilson 2019). Application of such a design in Australia, Indonesia, and other parts of the world depends on the adaptation of this concept within each specific context. Modifications need to be made based on input from all levels of stakeholder groups. An important point at the beginning of the first cycle is to understand the historical context. For example, in each country and region, examination of the policies and projects that are relevant to the environment, economic development, and symbiosis would be critical. Throughout this paper, I have raised questions that link this design with issues of relevance that can only be answered by researchers and stakeholders familiar with the various stratifications and cultural groups in a specific location. Researchers stand at an important point in history; they have the potential to contribute to the positive intersection of environmental justice, economic development, and human rights if they so choose.

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# Acknowledgments

We would like to begin by acknowledging that the symposium from which many of the chapters in this volume spring was co-located at the Sturt Campus of Flinders University in Adelaide and the University of Padjadjaran in Bandung, West Java. The symposium addressed gendered, cross-cultural perspectives on what it means or could mean to be an ecological citizen who respects multiple species and multiple forms of intelligence (Gardiner 2008), and we aimed to propose aspirational policies grounded in the necessity to protect current and future generations of life through the fair distribution or redistribution of resources.

Flinders University is built on Kurna Land<sup>1</sup>:

Statement of Acknowledgement: We acknowledge that the land we met on is the traditional lands for the Kurna people and that we respect their spiritual relationship with their Country. We also acknowledge the Kurna people as the traditional custodians of the Adelaide region and that their cultural and heritage beliefs are still as important to the living Kurna people today.

Flinders University addresses two metaphors in the central hub space:

- A colonial metaphor of a feather to symbolize the quill used by Matthew Flinders the explorer who kept a ship’s log and diary of his travels and the many risks he faced. He had minimal respect for a literal interpretation of rules, and he managed to turn his mistakes into opportunities.
- An Indigenous metaphor from Kurna leader Uncle Lewis Yerloburka O’Brien who gifted the following words:

When the outer world and the sky connect with the water, the two become one.

Many thanks to Michael Rook for the photographs of icebergs. Thanks also to Veronica McKay for contributing for Chap. 10 pictures by artist Jacques Coetzer

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<sup>1</sup>Our shared hope is to work with and through others who have the energy to work toward supporting pathways to self-defined well-being that meets the ethics test (namely decisions support the well-being of ourselves, others, and the environment) through designs that are inclusive wherever possible. Brief overview and focusing thoughts drawing on Ngarrindjeri philosophy: dynamic weaving together strands of social, economic, and environmental experience.

which were solicited for the South African literacy Kha Ri Gude (let us learn) workbooks for adult learners. We also acknowledge the picture reproduced from the school children's workbooks which also appears in Chap. 10 as well as in McKay, 2017. My thanks to Gerald Midgley for permission to cite the diagrams in Chap. 3 to explain the implications of values for making socially and environmentally just policy.

Our thanks to Jennifer Wilby for permission to include in this volume the papers delivered by McIntyre-Mills and Simbolon at the International Society for the Systems Sciences Conference in 2017. The papers appear as Chaps. 9 and 16.

Volume 1, "Mixed Methods and Cross Disciplinary Research: Towards Cultivating Eco-systemic Living," and the companion Volume 2, "Democracy and Governance for Resourcing the Commons: Theory and Practice on Rural-Urban Balance," of the series comprise papers that were presented at the symposium or that resulted from joint research that provided the basis for the cooperation. Thus, many of the papers are written together with the editors.

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Her recent research addresses non-anthropocentric policy for living systems. In 2017, her volumes for the Springer Contemporary Systems Thinking Series address the challenge to regenerate living systems. The sole-authored volume is entitled *Planetary Passport for Representation, Accountability and Re-Generation* and the edited volume together with Professors Romm and Corcoran-Nantes is entitled *Balancing Individualism and Collectivism: Social and Environmental Justice*. The latter comprises collected papers from the Special Integration Groups for the International Society for the Systems Sciences that McIntyre chairs together with 16 international contributors, including early career researchers. The research seeks a better balance across social, cultural, political, economic, and environmental inter-species concerns to ensure a sustainable future for current and future generations. The ecological citizen uses a “planetary passport” to track the distribution and redistribution of resources in the interests of social and environmental justice. Engagement links high-level challenges with individual perspectives, facilitating nuanced investigation of the complex ethical challenge of closing the gap in life chances. The central argument looks for ways to hold the powerful to account so as to enable virtuous living by the majority, to be demonstrated in a “planetary passport” that demonstrates a careful use of resources and a way to protect habitat for living systems.

**Norma R. A. Romm** (DLitt et Phil, Sociology) is Research Professor in the Department of Adult Basic Education and Youth Development, the University of South Africa. She is the Author of *The Methodologies of Positivism and Marxism: A Sociological Debate* (Macmillan, 1991), *Accountability in Social Research: Issues and Debates* (Springer, 2001), *New Racism: Revisiting Researcher Accountabilities* (Springer, 2010), *Responsible Research Practice: Revisiting*

*Transformative Paradigm in Social Research* (Springer, 2018), *People's Education in Theoretical Perspective: Towards the Development of a Critical Humanist Approach* (with V. McKay, Longman, 1992), *Diversity Management: Triple Loop Learning* (with R. Flood, Wiley, 1996), and *Assessment of the Impact of HIV and AIDS in the Informal Economy of Zambia* (with V. McKay, ILO, 2008). She has coedited three books—*Social Theory* (with M. Sarakinsky Heinemann, 1994), *Critical Systems Thinking: Current Research and Practice* (with R. Flood, Plenum, 1996), and *Balancing Individualism and Collectivism: Social and Environmental Justice* (with J. McIntyre-Mills and Y. Corcoran Nantes, 2017, Springer). She has published more than 100 research articles on the contribution of research to social development, the way in which research can be practiced accountably, Indigenous ways of knowing and living, and the facilitation of adult learning. She has worked on a range of projects aimed at increasing equity for organizations such as the ILO, ADEA, IOM, and UNESCO.

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