Introduction

The need for a more critical methodological scholarship has been expressed from various quarters within the social sciences with little progress towards a cohesive framework or series of frameworks that could facilitate the development of contextually relevant approaches to research. Currently, the majority of social science research is driven by academic institutions or through institutions that rely on donor funding for survival. The validity of research and the application thereof are often enabled or hampered by the agendas of the funding governments or organisations. These agendas determine not only the scope and focus of research undertaken on the continent, but also the methods deemed acceptable and relevant. African research is still largely dominated by epistemological and methodological frameworks that find their origins in the global North (see Chapter 1). It is therefore of great value to have a unique text that focuses on research by bringing together actual African research studies through the lens of methods. This is a novel way of presenting original research and the practical and pedagogical benefits of such an approach are manifold.

The focus on methods allows for a more critical examination of research in action, which in turn may inform future decisions on studies yet to be designed. While every study in this book paid special attention to methodological matters and challenges, each study also referenced ethical concerns and issues of rigour involved in using the method, but to varying degrees. Most studies discussed in this book manage to strike a fine balance between maintaining rigour and ethics and being socially relevant and are therefore excellent illustrations of the ways research can be simultaneously responsible and socially applicable. This chapter raises the debate around using tools and frameworks which originate in the global North to interrogate rigour. In so doing, the chapter does not advocate a rejection of currently accepted methods but highlights the need to use such tools with a more critical eye within social science research in global South contexts.

The chapter advocates further that rigorous and responsible research needs to be socially relevant and contextual. Hence, we provide some discussion on future trends for social science research in South Africa that offer the promise of even more socially relevant but rigorous ways of working that can lead to
societal transformation and development. We do so with the caveat that the field of social science research is broad and encompasses a multitude of methodological and political perspectives. We do not present the chapter as the definitive statement on trends in social science research; rather, we present our views on specific methodologies we think have the potential to contribute meaningfully in our context. In so doing, the argument is made for the indigenisation of research methods.

Specifically, we address methodological trends that have developed partly in relation to technological innovations and partly due to calls for social relevance in research and the contextual needs of communities. These include data sourcing strategies such as participatory research methods, archival research, big data methods and systematic reviews.

Rigour in research

According to Laher (2016), rigour generally refers to processes followed to ensure the quality of the final research product. Rigour in research ensures the legitimacy or soundness of the research process, allowing for greater authenticity of the results (Coryn, 2007). Issues of rigour are often assumed in research, yet across theses and published research one often finds evidence of questionable research design and ethical practices. In addition, from a decolonial perspective, the issue of what constitutes ‘rigour’ is contested, given that the project of knowledge legitimisation has characteristically been a global North one, as argued by Kramer et al. (Chapter 1). Thus, one way of thinking through rigour from a global South perspective is to rise to the challenge proposed by Connell (2014), who argues that indigenous research in the global South presents an opportunity to construct ‘new’ knowledge and formulate alternative definitions of rigour. This is particularly evident in the qualitative and transformative sections in this book (Sections Two and Three).

Notwithstanding the above comments, it is worth underlining what is meant by research rigour, particularly in the context of this book. In examining rigour, Fonseca’s (2013) analysis of the six core reasons for manuscript rejection are useful. The six reasons are 1) issues unrelated to the manuscript; 2) mismatch with the journal; 3) inadequate preparation; 4) design flaws; 5) poor writing and organisation; and 6) lack of originality (Fonseca, 2013). As is evident, four of these six pertain to rigour. Some issues, such as inadequate preparation and poor writing and organisation, are easily fixed. However, the two aspects that link to methodological (design flaws) and conceptual (originality) rigour are vital.

Design flaws involving poorly formulated research questions; poor conceptualisation of the approach to answering the research question(s); choice of obsolete, weak or unreliable methods; choice of an incorrect method or model that is not suitable for the problem to be studied; inappropriate or suboptimal instrumentation; a small or inappropriately chosen sample; inappropriate statistical analysis and/or unreliable or incomplete data render a study and its results invalid (Fonseca, 2013). Of course, analyses of rigour must also be complemented
by the establishment of trustworthiness – that is, the truth value, consistency and applicability of the data (see Anney, 2014; Guba, 1981; Guba & Lincoln, 2005). As noted, by striking a balance between applicability and methodological precision, this book essentially strikes the balance between rigour and trustworthiness.

Conceptually, Fonseca (2013) identifies the following as core to the rejection of manuscripts and as aspects lacking in originality: results that are not generalisable; secondary analyses that extend or replicate published findings without adding substantial knowledge; studies that report already known knowledge but position the knowledge as novel by extending it to a new geography, population or cultural setting; results that are unoriginal, predictable or trivial; and results that have no clinical, theoretical or practical implications. While these issues are undoubtedly important, the reasons for the rejection and the invisibility of research articles produced in the global South are also political (see Czerniewicz & Wiens, 2013) and thus it is again imperative to cast a decolonial lens on how research is made ‘legitimate’ (see Chapter 1).

Tools to establish rigour

While the section above outlined key themes relating to rigour, it is equally important to examine the means by which rigour is achieved. Much is written about establishing rigour in the quantitative, qualitative and mixed methods paradigms. Classic texts by Rosenthal and Rosnow (1991) for quantitative research, Nunnally and Bernstein (1994) for psychometric theory, Denzin and Lincoln (1994) and Guba and Lincoln (1994) for qualitative research, and Creswell (2014) and Tashakkori and Teddlie (2010) for mixed methods research serve as useful guides for understanding the tools towards establishing rigorous, representative and responsible research. Hence, issues of internal and external validity are addressed in Rosenthal and Rosnow’s (1991) text. Nunnally and Bernstein (1994) provide clear input on the psychometric canons of reliability, validity, bias and fairness. For qualitative research, both Denzin and Lincoln (1994) and Guba and Lincoln (1994) discuss issues of transferability, dependability, confirmability and trustworthiness. Creswell (2014) provides a framework for evaluating mixed methods studies in terms of responding to criteria for rigour for both quantitative and qualitative designs whilst simultaneously ensuring that the correct mixed methods design is executed and the strands of data appropriately integrated. All the chapters in this book conform to these standards.

Whilst these guides are useful, one has to question the often clinical, checklist approach adopted by some texts in terms of designing research. Any person doing research in the field is aware that, in reality, adhering to these canons is not always possible. This is more so in contexts with low resources, such as in the majority of the developing world. Hence, it is often argued that in these contexts, these canons of rigour stifle research and, if applied particularly in the context of social science research, the findings are artificial and unrepresentative of the lived realities of those living in the context. Hence, texts emanating from the global South, and South Africa in particular, argue for a more pragmatic
approach towards rigour. Laher (2016), for example, argues for a more contextual approach towards rigorous research in quantitative studies that originates from her experiences of having taught and conducted research in South Africa for over 15 years. Similarly, texts by Babbie and Mouton (2011), Terre Blanche, Durrheim and Painter (2006), and Wagner, Garner and Kawulich (2011) provide a more pragmatist view of rigour, which in contexts such as South Africa works really well. Such approaches ensure that the criticisms of statistical versus practical significance (see Cumming, 2013) are also addressed. Further, the work of Terre Blanche and colleagues (2006) provides a radical critique of methods, specifically located within the discipline of psychology, by contextualising the methods in a deliberately South Africanised approach that challenges Euro-American values (Wilbraham, 2007). Excellent examples of this can be found in this book in the chapters by Maree (Chapter 12), Whitehead (Chapter 16) and Barnes (Chapter 6), respectively. Maree blurs the boundaries between research and practice and demonstrates a novel use of narrative research, while Whitehead and Barnes take well-established social sciences methods and utilise these within critical and transformative frameworks, respectively. These authors demonstrate that disruption can be achieved within established methods, provided that the intent and the purpose of the methods applied are informed by a critical framework embedded in the principles of social justice and an honest reflection on the needs and context of the local systems of knowledge production.

Ethics in research

In addition to being cognisant of contextual issues relating to the construction of ‘rigour’ in the knowledge economy, we would add ethics as a further and perhaps even more important aspect to this. Ethics often gets subsumed in either conceptual and/or methodological rigour largely because it would be very difficult to design and execute a study without taking cognisance of ethical considerations. Ethics in research is of vital importance, so much so that it is virtually mandatory in all theses and manuscript submissions to produce some evidence of an ethics review. Given the primacy of this, we would argue that ethics needs to take centre stage in any research being planned and executed. Quite often issues of consent, confidentiality, privacy, protection from harm and participation are well attended to but ethical considerations post data collection tend to be forgotten. Hence, debriefing and feedback, follow-up where necessary, storage and dissemination of data and results often do not receive enough attention.

Wassenaar and Slack (2016, p. 311) refer to research of a South African research ethics committee which identified the following amongst the most frequently cited reasons for the non-approval of research proposals: problems with the consent form or process (27%); problems with the rationale or design or instruments (21%); problems with the selection of participants (14%); problems with post-research consideration of participants (14%); risk/benefit queries (9%); administrative queries (7%); queries about the social value of the study (4%); and problems with collaborative partnerships (3%). Wassenaar and Slack (2016)
Ethics in global South community contexts should pay special attention to issues relating to limited resources, power relations between researchers and participants, and participants’ abilities to consent given language barriers (if the information sheet is in a non-native language) and literacy (should consent be written). Additionally, low-resource and migrant communities are often in flux in low-income contexts, resulting in issues relating to participant dropout, contamination between experimental and control community groups, and moral dilemmas relating to the experimental community receiving treatment when the control community does not (see Kramer, Seedat, Lazarus & Suffla, 2011). These concerns should be central to ethical considerations in research that focuses on developing communities and contexts. Van Niekerk and Ismail (2013) and Ismail (2018) conducted studies considering community members’ willingness to participate in community interventions. The study provided interesting insights into community involvement and the intricacies of access and informed consent within low-resource settings. Additionally, their discussion of the use of community members to collect data and the safety of community members provides further food for thought from both a methods and an ethics perspective. Hence, along with ethics and rigour, the indigenisation of methods is core to developing the social sciences in the global South.

Indigenisation of methods

The social sciences and humanities are deeply implicated in the historical colonisation of Africa and Africans and play a significant role in the process of deculturation within the African context (Lebakeng, 2014). The indigenisation debate therefore has to extend beyond the focus on specific techniques, treatments and approaches and requires vigorous reconstructions of the epistemological foundations of methods applied within local contexts. To a large extent, the social sciences and humanities are products of the European Enlightenment and were embedded within educational systems such that many Africans have internalised Eurocentric theories and paradigms as well as their associated epistemological, theoretical and methodological baggage (Lebakeng, 2014). It is therefore crucial to identify ways of producing knowledge that are closer to the indigenous experiences of African people and contexts.

Laher and Botha (2012), for example, bring to the fore issues relating to the unique context of conducting social science research in South Africa, from dealing with linguistic and cultural diversity through to the lack of resources. Further, the recent decolonisation debates in higher education contexts in South Africa are as applicable to research methods as they are to all other knowledge productions in South Africa (see Booyzen, 2016). Lau, Suffla and Kgatitswe’s (2017) case study is a good example of the indigenisation of the digital storytelling method. Lau et al. (2017) argue that they deliberately attempted to bridge a ‘western’
framework with an ‘indigenous’ framework that drew on elements that reflected ‘indigenous’ modes of knowledge-sharing and creation, specifically the oral tradition of telling and listening to stories in groups. This approach was adapted from the shared circle method used by Lavallée (2009) in her work with Aboriginals in Australia. This method is similar to the focus group but does not interrupt with prompts and questions. Rather, it draws on a more ‘indigenous’ view of knowledge as fluid, relational and non-linear (Lavallée, 2009). The Photovoice (Chapter 22), autoethnography (emerging across social science disciplines from its older anthropological forms; Chapter 17) and community scorecard methods (Chapter 23) presented in this book achieve similar outcomes.

Pienaar (2015) argues for the use of African indigenous methodology in research. She describes the use of lekgotla (makgotla pl.), where the community participates in the research process from its inception. Hence, the community is responsible for facilitating the research questions and reaching a resolution. Pienaar (2015) argues that such an approach is of mutual benefit as the community learns to solve its own issues and the researcher learns more about how a community resolves its issues. This participative–collaborative process creates mutual respect and empowerment for all involved. Through the use of lekgotla, Pienaar (2015) demonstrates how concepts such as focus groups, gatekeeping and credibility can be approached in a more indigenous and contextually relevant manner.

While it is beyond the scope of this chapter to provide a comprehensive description of all the initiatives and debates relating to the indigenisation of methods within the South African context, the purpose of this discussion is to highlight the need for a similar text in the future that could contribute practical examples – derived from the experience and collective wisdom of researchers within the field – demonstrating the applicability of research methods derived from indigenous knowledge systems. This is significant as it has massive implications for the way knowledge is made, by whom and for whom. Further, the process of developing indigenous knowledge systems cannot simply be constructed around technical debates on whether specific techniques or approaches are appropriate for local contexts, but rather requires a critical examination of the state of the science within a specific context, as well as a fundamental shift within the community of practice. For instance, Suualii-Sauni and Fulu-Aiolupotea (2014) describe the community-building necessary to develop indigenous approaches within research communities in Pacific institutions. In particular, they highlight the crucial role of building capacity within local research communities as well as the need to fundamentally revise curricula in the indigenisation project. They argue that the development of research methods cannot simply be located within the ambit of a core of methodologists, but that new methods should be widely shared to ensure that they are thoroughly critiqued and embedded within the larger knowledge systems across the discipline (Suualii-Sauni & Fulu-Aiolupotea, 2014).

In the quest for rigorous and relevant research, researchers are often criticised for losing touch with lived experiences, particularly in the quantitative paradigm. However, the more flexible, contextual approaches, such as those
proposed by authors in the global South (in this book and the examples in this chapter), have the potential to produce both relevant and rigorous research that simultaneously responds to pragmatic needs and is justice driven.

Indigenisation and the need for reflexivity

The indigenisation of knowledge in the global South cannot occur in isolation from researcher reflexivity and positionality. This involves a deconstructive process that surfaces a given researcher’s or research group’s impact and influence on the entire research process as well as an analysis of the power dynamics, points of resistance and sociohistorical influences that shape the data gathering and analytic procedures (Macbeth, 2001). While important in all research contexts, this is even more crucial in a global South context of knowledge production, which is typically characterised by external stakeholders and assessment and intervention agents conducting research in communities in which they are insufficiently immersed. This tension is further exacerbated by socioeconomic, linguistic, cultural and racialised differences between researchers and participants (Kramer et al., 2011). In addition, data collection tools (surveys, interview schedules, etc.) are often borrowed from European or American contexts and thereafter administered, scored and interpreted by researchers who are privileged by their access to particular knowledge formations (Lafer & Cockcroft, 2017; Murphy & Davidshofer, 2005).

Even if these tools are adapted to apparently suit a given context, this adaptation is regularly conducted without consultation with the community of interest. This results in a number of issues. First, community assessments may be at best irrelevant and inappropriate and, at worst, discriminatory. Second, this type of researcher–participant relationship inadvertently positions the external research agents as more powerful through the implication that they are experts ‘by virtue of their access to theory, resources and knowledge legitimating mechanisms’ (Kramer et al., 2011, p. 513). These two issues are further problematised by issues relating to the nature of communities in low-income and developing contexts. These spaces are typified by challenges linked to limited resources; a lack of access to employment, education and healthcare facilities; and high levels of violence and injury. As such, individuals participating in research in these contexts are often dealing with multiple and competing demands and thus fail to participate consistently in the research process (Van Niekerk et al., 2014). Nonetheless, in spite of these issues, a number of methodological approaches to research support community participation, a more reflexive approach to power dynamics, and the assurance of treating participants as agents in their own right and experts in terms of their own experiences and contexts. Sanchez-Betancourt and Vivier (Chapter 23), especially, achieve this with the use of their participatory methodologies. Such community-based approaches are fast being recognised as examples of good research practice that hold promise for the greater social relevance of research but also for social justice and empowerment initiatives.
Community-based approaches

An approach often cited as being amongst the more rigorous but also socially responsive and responsible methods is the Communities That Care (CTC) model (Hawkins, Catalano & Arthur, 2002). The CTC model ensures that the research process is community driven by matching community needs with assessment and working collaboratively with community agents to develop research assessments and later interventions so that community ownership and sustainable research processes are ensured. However, the focus on community ‘needs’ may inadvertently support a deficits approach to community development and so a model such as the CTC could be further supported by asset-based approaches to community research. These approaches are far more affirmative – through identifying and mobilising previously unrecognised community resources, skills and assets, change strategies are implemented that are focused on resilience, transformation and ‘value empowerment and the redistribution of skills and resources’ (Kramer et al., 2011, p. 503). In a similar way to Pienaar’s (2015) lekgotla, asset-based approaches thus follow community-based participatory research in that they are participatory and collaborative and intend to build community consensus and platform previously marginalised voices, which is especially advantageous in developing contexts often undermined by oppression, conflict and scarce resources (Kramer, Amos, Lazarus & Seedat, 2012).

A data collection initiative that facilitates the articulation of marginalised voices and the transformation of oppressive power structures is the community conversations technique developed on the basis of Brown and Isaacs’s (2005) café conversations. Community conversations collect data through the use of uninterrupted dialogue between participants of a community. The method is based on the principles of appreciative inquiry and action research (see Chapter 21), such as relational knowledge, provocation and collaboration as a means to destabilise oppressive community discourses, articulate shared challenges and arrive at community-driven solutions (Kotzé, Seedat, Suffla & Kramer, 2013). Together, all of these techniques call for a far more community-centred and context-driven approach to research. As such, methodologies such as ethnography that respond to this call should be further supported and drawn upon in African contexts. Schmid (Chapter 17) and Whitehead (Chapter 16) both respond to this need.

Whilst the above-mentioned approaches to research methods are clearly transformative and contribute to the indigenisation and decolonisation of research methods, it is essential that this is followed through to research output. As such, interventions based on research must remain committed to community ownership, participatory methodologies and the platforming of marginalised voices. Furthermore, research must have an impact on governmental policy and this should be both community driven and translated into the language of the community. These actions will surely contribute to the objectives of decolonisation in science, including privileging indigenous voices, informing the political liberation of marginalised groups, and strengthening and revitalising indigenous cultures and languages (Smith, 2007). Any chapter on future trends in social science research, whether it be in the global North or South, would be remiss if
the role of technological advancements in knowledge production was not examined. In the sections that follow, we highlight how technology presents new and interesting avenues for research within the social sciences.

Technology and data collection and analysis

The enhancement of technology specifically as it pertains to mobile and smart devices has meant that taking photos and making videos is increasingly easier. Furthermore, such developments have ensured that field research, interviewing and focus groups are also less cumbersome. A range of speech-to-text software providers and a number of developments from independent technology start-ups are revolutionising transcription and translation. The development of these speech-to-text applications has also enhanced research and much reduced the time taken in previously long and cumbersome processes such as transcription. Data analytic software has also developed such that the examination of pictures and videos can be done digitally.

As such, qualitative data analysis software has substantially reduced the time and resources required to conduct analyses in qualitative studies. Similarly, software to analyse quantitative data is also developing at an alarming rate – huge data sets and previously complicated analyses can now be accomplished at the push of a button. Open access software is also increasingly available and very reliable. For example, R software is used consistently across the social sciences and is definitely an option for settings such as South Africa where resources for the more expensive licensed software are not available. Qualitative software, on the other hand, should be used with its potential for bias in mind – given its limited availability in English, research conducted in African languages cannot benefit from this technological advance, which has implications for the continued marginalisation of global South research outputs.

Technology has also facilitated other developments, such as crowdsourcing. Behrend, Sharek, Meade and Wiebe (2011, p. 801) define crowdsourcing as ‘the paid recruitment of an online, independent global workforce for the objective of working on a specifically defined task or set of tasks’. Amazon’s Mechanical Turk (MT) is amongst the most popular crowdsourcing platforms. Requesters (in this case researchers) can outsource small tasks (e.g. surveys), referred to as human intelligence tasks, to a global workforce (potential respondents) in exchange for monetary compensation (Laher, 2016). Monetary compensation on the internet can take many forms, but in the case of MT respondents can be rewarded with Amazon.com gift certificates. Behrend et al. (2011) argue that this approach decreases respondent biases as a requester may downgrade a worker/respondent on MT if substandard work is produced. This impacts the worker/respondent as it decreases his/her rating on MT. Of course, such a system may increase social desirability effects.

The debates on the merits and demerits of crowdsourcing for data collection are ongoing (see Behrend et al., 2011; Buhrmester, Kwang & Gosling, 2011; Casler, Bickel & Hackett, 2013; Paolacci & Chandler, 2014). For South Africa, issues of
literacy, language, quality of education, socioeconomic status and culture have been identified as impacting on research findings and often require quite deliberate attempts at obtaining appropriate samples (Laher & Botha, 2012). This would be exacerbated in the context of online research given the current digital divide that exists on the continent (see Fuchs & Horak, 2008; Russell & Steele, 2013). Hence, whilst crowdsourcing is a seductive option, it would need further exploration before being employed for South African research.

All of this, coupled with the rise in user-produced content on social media sites and access to and opportunities for analysing human interactions visually in vivo, is unprecedented. As the information is freely available and open to the public, there are as yet no violations of ethical principles in analysing information on social media. Hence, video clips of violence or open social media chats on xenophobia become authentic phenomenological data for socially relevant research.

Technology and research collaboration

Technological developments facilitate research further in terms of making collaborations between researchers much easier. Technology offers platforms for the easy and wide distribution of research. Researchgate and Academia.edu are two examples of this. Further, these developments allow platforms for data sharing, which is increasingly becoming commonplace internationally but is still a relatively recent development amongst the social sciences in South Africa. However, the commercial nature of some of these enterprises cannot be ignored. What essentially starts out as a free service for the research community moves on to become a business where knowledge is traded and commodified.

Access to secondary data sets is also easier, but again, much research in the social sciences relies on primary data, regularly neglecting the bigger and often longitudinal data sets that are already available beyond Statistics South Africa and Census data. The mortality, health and violence databases freely accessible from the World Health Organization website, the poverty, education, gender, health and population statistics and world development indicators freely available as raw data or in the form of reports and tables from the World Bank, provide access to large global and nationally representative data sets. Chapter 2 in this book, which draws on the (South African) National Injury Mortality Surveillance System, provides an excellent example of using such data sets. Re3data.org is a searchable repository linked to a number of other data repositories across a range of countries, offering information about social issues and economics. Locally, Datafirst provides access to curated survey and administrative micro data to South African and other African databases. Afrobarometer regularly publishes data on pan-African national public attitude surveys on democracy, governance and society. While it is beyond the scope of this chapter to provide a comprehensive list of databases, the resources identified above have already made significant inroads into widening access to research information.

One of the considerations facing researchers making use of longitudinal data sets is the origin and ownership of these databases, which may introduce
specific biases that are informed by the worldview of the funders and international organisations. It is therefore important that researchers using these data sets are critical in their appraisal of these sources with reference to their validity in relation to the phenomena under study. This is further linked to the ethics of using big data.

Big data

Secondary data sets such as the ones identified in the section above have traditionally been used for collaboration. However, a major development in the last decade is the rise of big data methods and technology. Big data differs from secondary data in that the data archives mentioned above are simply data warehouses, while big data refers to a set of technologies capable of storing, processing and reporting on large volumes of unstructured data (Borkar, Carey & Li, 2012).

Big data has fundamentally changed the landscape within a number of sectors, with retail, insurance, marketing, policy development, economics and medical scientists making increasing use of large-scale data sets to investigate new trends and to develop fresh insights into the human experience. Arguably, social scientists have been slower than their counterparts in other fields to utilise the promise of big data as a means of revolutionising research into human and social systems. However, there have been well-publicised applications of big data within education (Arnold & Pistilli, 2012; Prinsloo & Slade, 2014; Siemens, 2010), media (Harrison, 2010; Lim & Steffel, 2015) and social media (Berthon, Pitt, Plangger & Shapiro, 2012; Pietrobruno, 2013).

Along with the trends described above, the trend towards increasingly improved indexing and data processing systems has provided researchers with unprecedented access to information about the behaviours and perceptions of individuals across major cross-sections of social structures. With the rise of big data, a number of new tensions and ethical considerations have come to the fore, and chief among these is the tension between the right to individual privacy and the larger societal benefit derived from well-designed, effective research. In the context of higher education in particular, the debates on students’ rights to individual privacy and the greater good of improved methods for identifying trends in student successes are gaining increasing attention from across the sector (Prinsloo, Archer, Barnes, Chetty & Van Zyl, 2015; Prinsloo, Slade & Galpin, 2012). It is impossible to fully anonymise identifiable data without affecting future analyses in some way or limiting the ability to easily replicate the findings of peers within the field (Drachsler & Greller, 2016; Zimmer, 2008).

Researchers making use of big data are therefore faced with a complex series of interdependent rights that have a direct impact on the rigour of the study and that hold serious impediments for ensuring ethical practices during the course of the study. Within the South African context, where literacy rates are chronically low, issues of consent related to public data take on an additional dimension with the assumption that the broader public are aware of and sufficiently understand the nature of the data economy that drives big data research. Furthermore,
the nature of the data, which includes the original purpose behind the data collection as well as the various processes applied during analysis, needs to be carefully examined for embedded bias and structural discrimination.

Prinsloo et al. (2015) raise the concern that large data sets and the algorithms used to analyse them may perpetuate historical and structural discrimination if these methods are applied uncritically and without consideration of the origins of the data used. There are also concerns surrounding the use of algorithms to mediate the social environment of human social systems, where decision-making is deferred to algorithms which may hold or reinforce discriminatory practices, effectively dividing society into those who develop the algorithms and those whose behaviour is regulated by them (Morozov, 2013). The implications of using big data require critical and systematic inquiry into the sociological and psychological impact on society as a whole, and, within the context of South Africa, hold significant questions relating to the nature of knowledge production within this field for the benefit of local populations.

Digital storytelling

An emerging and African-centred trend driven by technological development is digital storytelling. Digital storytelling involves merging stories in the form of short vignettes with multimedia content (images, sound, video) to create a short movie (Rossiter & Garcia, 2010). It has its origins in the oral tradition of storytelling and was popularised by Storycenter, formerly the Center for Digital Storytelling (Lau et al., 2017). Digital storytelling essentially involves seven steps: 1) owning your insights; 2) owning your emotions; 3) identifying the moment of change; 4) seeing your story; 5) hearing your story; 6) assembling your story; and 7) sharing your story (Lambert, 2013). Chapter 22 in this book demonstrates how the co-creation process, which aligns with the principles of empowerment and multicultural perspectives in research, can greatly enhance the scientific project of South African social sciences. The tension around innovative methods such as Photovoice is that they remain on the fringes of the dominant schools of methodological thought, with little critical engagement with the relevance of the underpinning epistemological value of knowledge co-creation with participants. As a logical development from the Photovoice technique, digital storytelling is used in community contexts to share knowledge, ideas and culture. Through the platform of encouraging voice – voice as talk, voice as identity and voice as power – digital storytelling is a powerful modality to empower individuals in marginalised contexts. It is increasingly being used as a vehicle to explore, understand and intervene in the everyday lives of ordinary people to improve their material conditions and promote social recognition (Gubrium, 2009).

Lau et al. (2017) present an interesting discussion of the use of the storytelling method in a South African context. They describe their use of the method as a hybrid one drawing on elements of narrative research, indigenous storytelling and narrative therapy. Their objective in using this method was ‘to elicit participants’ everyday meanings of peace and violence as they emerge naturally
in the processes of storytelling, as opposed to eliciting more socially contrived responses through direct questioning’ (Lau et al., 2017, p. 151). Lau and colleagues (2017) argue that their explication of the story-circle process (an adaptation of digital storytelling) is not to call for a ‘model for best practices’, but rather to demonstrate how insights can emerge from the messiness, ambivalence and complexities within the processes of group storytelling. They highlight the ethical tensions between validating the struggle and pain (reinforcing a narrative of community hopelessness) and recreating ‘agentic possibilities for hope and change’, which in turn raises critical questions about the roles of facilitators (and co-creators) of a group story that comes to represent the story of the group of community leaders (Lau et al., 2017, p. 154).

We have chosen to highlight the example of digital storytelling in this chapter as it brings to the fore several themes for consideration in understanding future trends in social science research in South Africa. Firstly, digital storytelling represents a natural progression from Photovoice and it can be argued that technological developments have a direct impact on research developments. The second aspect that this case study highlights is the indigenisation of methods that respond to the call for decolonising research in Africa. Finally, the issues of power and positionality as applied to the researcher and the researched within research are made salient.

Systematic reviews

Linked to technological development, the ease with which research resources such as theses and journal articles can be accessed has also facilitated the development of the systematic review method. Meta-analyses were common in the pre-1990s era of positivist research in the social sciences. However, the paradigmatic shifts in research coupled with the easier access facilitated by technological development allowed for richer (and often less statistically dependent) forms of reviewing literature. In some ways a combination of traditional theoretical review articles and meta-analyses, systematic reviews have much to offer (Gough, Oliver & Thomas, 2017). A synthesis of literature, whether in the form of a scoping review or a more comprehensive systematic review, allows for a quick and thorough mapping of work in a particular area that not only describes the current status of the field but also offers a meta-commentary. This in-depth textual analysis can inform policy and intervention design that has a greater likelihood of success given the evidence base on which it would be constructed. An example of such research can be found in Van Rooyen, Stewart and De Wet’s (2012) systematic review, which explored the impact of micro finance in South Africa.

Traditionally, the systematic review method has been located in the health sciences and used particularly for establishing the efficacy of randomised control trials. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement and the standards proposed by Cochrane reviews are accepted as the gold standards for those wanting to use this technique. From
a social science perspective, some research would be unable to conform to the standards proposed by PRISMA and Cochrane reviews, but these are nonetheless useful to consult when undertaking systematic reviews in the social sciences. More recently, the Campbell collaboration has proposed more independent field standards.\textsuperscript{10} The technique of qualitative meta-synthesis has also recently developed; it functions much like a systematic review but it is explicit about only considering qualitative studies for the review (see Major & Savin-Baden, 2010; Sandelowski & Barroso, 2007).

Gough et al. (2017) indicate that systematic reviews have not necessarily been employed in the social sciences. This is largely due to critiques of the method's positioning in more quantitative, empirical and non-critical reviewing of evidence. Other critiques question the rigour of the method given the varied ways in which it is presented, certainly in the social sciences. This is currently evident in the field. Of late, a number of systematic reviews have been published in social science journals but very few authors appear to conform to a particular method. Gough et al. (2017) acknowledge this and argue that this method is still in its infancy, particularly in the social sciences, and more standard forms of systematic reviewing in the social sciences are still developing.

Aside from Gough et al.'s (2017) text, the Evidence for Policy and Practice Information and Co-ordinating Centre at the University College in London has been instrumental in providing information on conducting and using systematic reviews.\textsuperscript{11} Closer to home, the Africa Policy Network in partnership with the University of Johannesburg provides excellent resources through their Building Capacity to Use Research Evidence (BCURE) programme.\textsuperscript{12} These resources not only demonstrate the utility of the method in the social sciences but also provide a framework to establish rigour in the design, collection and analysis of evidence. The Critical Appraisal Skills Programme's Qualitative Checklist Tool is also commonly accepted in the field as the instrument of choice used to assess the quality of qualitative studies (CASP, 2017). Analysing results in a systematic review has also evolved, with thematic synthesis as proposed by Thomas and Harden (2008) offering a richer and more qualitative appraisal of results and thus making this method more amenable to social science research.

Whilst systematic reviews have much to offer social science research going forward, a serious criticism remains. Gough et al. (2017) argue that systematic reviews hold appeal to governments as they allow governments to manage and control research through the platforming of an agenda. Hence, this allows the state to specify and control the research agenda. Along with research funders, the state and groups of individual researchers have the power to shift political agendas in any particular direction. These arguments are, however, true of most research and have been discussed by Kramer et al. (Chapter 1). Given these dynamics of power and positionality, it becomes extremely important that issues of reflexivity in research are addressed. Being more explicit about the personal and political in research and increasing the potential for the increased involvement of different sections of society nationally and internationally are important goals for all research (Gough et al., 2017).
Archival research

Archival work is another research innovation that has not been very central to most fields within the social sciences in Africa. Archival research methods involve the investigation of documents and texts, often emanating from a different sociohistorical context (Ventresca & Mohr, 2002). In this book, Bowman, Siemers and Whitehead (Chapter 18) use the archival data analytic technique of genealogy to investigate and examine the historical construction of the miner in South Africa. Another good illustration of the use of archival research comes from the work of the Apartheid Archives Project. This project involved researchers engaging with a number of texts and stories emanating from the apartheid era, with the intention to reclaim and reappropriate the archive of apartheid-based documents by very intentionally identifying the sociopolitical tensions inherent in these texts. In turn, these texts are liberated from a racialised past and the narrators of the texts are given a voice and are thus no longer marginalised (see Stevens, Duncan & Hook, 2013; Stevens, Duncan & Sonn, 2010). More recently, the archival method has also been applied to digital images, videos, emails, web pages and electronic databases (Ventresca & Mohr, 2002). Given the potential for this type of research to yield unique contributions from indigenous knowledge systems, more archival work needs to be encouraged in the global South. Further, as demonstrated by the Apartheid Archives Project, it has the potential to be a particularly useful technique to identify and deconstruct oppressive and colonialist practices of the past. However, and as indicated by Bowman, Siemers and Whitehead, while this method has the power to disrupt disciplines and the sociohistorical contexts within which they exist, the analytic output often provides an incomplete picture and thus should be complemented by other data collection material that responds to the objective of the analysis (interviews, current institutional documents, observations, etc.).

Conclusion

This chapter provided discussion on and hopefully further insights into issues of rigour, responsibility and the social relevance of social science research. Further, the chapter presented a discussion on the indigenisation of research methods as well as the impact of technological developments on research productivity and dissemination. By bringing research rigour, relevance and ethics into discussions concerning the indigenisation of research methods and the empowerment of research participants in developing contexts, this chapter demonstrated the complexity and challenging nature of conducting research in global South contexts. Overall, this book makes a unique contribution by beginning to deal with some of these challenges. The studies in this book, as well as the methods and issues identified in this chapter, are therefore key to future innovations in research methods in global South contexts, as they manage to avoid overly clinical applications of research practices whilst driving novel and insightful
methodological approaches that contribute to the transformation of research, and ultimately society, in often marginalised contexts.

Notes
1 https://elearning.trree.org
2 http://www.who.int/gho/en/
3 https://data.worldbank.org/
4 https://www.re3data.org/
5 https://www.datafirst.uct.ac.za/
6 http://www.afrobarometer.org
7 https://www.storycenter.org/
8 http://www.prisma-statement.org/
9 http://www.cochrane.org/what-is-cochrane-evidence
10 https://www.campbellcollaboration.org/campbell-systematic-reviews.html
11 https://eppi.ioe.ac.uk/cms/
12 http://www.africaevidencenetwork.org/core-capacity-building-resources-4/

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