

Integrity, Researcher Identity, and Islands:

An interpretive approach to exploring individual and disciplinary values through creative metaphors.

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DECLARATION

I know the meaning of plagiarism and declare that all of the work in the dissertation, save for that which is properly acknowledged, is my own.

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*'Cui dono lepidum novum libellum
arido modo pumice expositum?'*

'To whom should I dedicate this new, charming little book,
just now polished off with dry pumice?'
(Catullus, poem 1)

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Abstract

This project investigates how emerging researchers engage with Research Integrity (RI) values in the context of their disciplines at a South African higher education institution (HEI). RI is a growing field of study, to which scholars are drawn from a wide range of disciplines, from administrative or management offices in HEIs and even journal editors and publishers. In this context, understanding how researchers engage with RI and choose to enact or contest RI values and normative assumptions within their disciplinary spaces can contribute towards the expanding body of RI scholarship.

The project took a creative and interpretive approach to examining themes around researcher identities, disciplinary discourses, and engagement with RI. Participants completed a pre-interview exercise by developing a 'researcher identity map' and reflective commentary. This was used as a tool for discussion and exploration during a semi-structured interview. Data artefacts were analysed abductively and iteratively using the interpretive tools provided by the domain of specialisation in the Legitimation Code Theory toolkit. This iterative process resulted in a translation device developed specifically for this data. The data were analysed using the translation device which focuses on epistemic relations and social relations in the context of the participants' disciplines.

A key finding of this project is that, while disciplines do play an important role in mediating researchers' relations to and with RI, it is the personal attributes of individual researchers that are most likely to drive the nature of their engagement with the field. As RI matures, it is therefore important to adopt a differentiated approach to RI training that emphasises the perspectives and values of individual researchers; engages with the epistemic relations and social relations legitimated by their disciplines and works with how those values impact on RI practice in disciplinary contexts.

Abbreviations

ER	Epistemic relations
ERP	Emerging Researcher Programme
HEI	Higher Education Institution
HPCSA	Health Professions Council of South Africa
LCT	Legitimation Code Theory
ORI	Office of Research Integrity (unless otherwise specified referring to UCT's ORI)
RCR	Responsible Conduct of Research
RD	Researcher Development (referring specifically to the cluster based in UCT's central RO)
RI	Research Integrity
RIO	Research Integrity Officer
RO	Research Office
RPOs	Research Producing Organisations
RRPs	Responsible Research Practices
SR	Social relations
UCT	University of Cape Town
WCRI	World Conferences on Research Integrity

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Introduction

Research Integrity (RI) is a growing field of study, globally. It is incorporated into the University of Cape Town's (UCT) research environment through the institutional Office of Research Integrity (ORI) and the *Policy for the Responsible Conduct of Research*, which defines RI as:

“the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles for all activities related to scientific research” (UCT Policy for the Responsible Conduct of Research, 2020, p. 1).

RI practice is underpinned by a number of values: honesty, accountability, professional courtesy and fairness and good stewardship of research¹; integrity, trust, transparency, and compliance;² respect and care³; and others, as articulated by international and national statements and declarations. These normative values are often taken at face value and not interrogated to see how researchers engage with them and the level of integration (or not) that takes place within their disciplinary practices.

Research into RI is largely quantitative; often driven by institutional reporting requirements, descriptive of the status quo and makes recommendations for improvement⁴; typically originates in the global North and frequently comes out of biomedical or natural sciences. Using research paradigms that are less common in the RI research space, I aim to add a fresh perspective to a growing field of study. I will be questioning the normative position of RI to explore whether the values espoused, and their accompanying knowledge practices, are compatible with values and practices within scholarly disciplines. In so doing I will also explore whether researchers drawn from a range of disciplines find RI values meaningful and if there is space to practice them. My research project is purposefully qualitative and reflective in approach and aims to unpack the practices of researchers as they navigate their disciplinary identities as emerging researchers and engage⁵ with RI values. I have been guided by the broad question: *How do emerging researchers, based at UCT, engage with research integrity values in their disciplinary contexts?*

¹ These values form part of the *Singapore Statement on Research Integrity* (<https://wcrif.org/documents/327-singapore-statement-a4size/file>) and are the basis for many training interventions, globally, including UCT's programme.

² *Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations* (<https://wcrif.org/documents/354-montreal-statement-english/file>).

³ *Global Code of Conduct for Research in Resource-Poor Settings* (<https://www.globalcodeofconduct.org/wp-content/uploads/2018/05/Global-Code-of-Conduct-Brochure.pdf>).

⁴ Tight (2014), citing Bryman (2004) notes that a lack of theoretical connection is often regarded as *naïve empiricism* (2014, p. 95). This is term could be fairly applied to some types of RI research.

⁵ In this work I will use phrase 'engagement' or 'engage' to mean the extent to which a participant's efforts (both abstract and material) are directed towards RI pursuits.

Definitions

Terms which will be applied synonymously are (i) academic and researcher and (ii) training, development, and education. While the latter group covers a broad range of 'interventions', which are understood to be separate units of analysis in Higher Education Studies, for the purposes of this work, which considers knowledge practices and relations within disciplines, it will suffice. Much RI research does not originate in education-based spaces or disciplines, nor are my participants educationalists by training. Thus, a more flexible understanding of the definitions permeates this work. Where possible, I have tried to consciously apply only the phrase '*training*'. On the matter of academics versus researchers, the same logic applies. An *academic* may, arguably, be linked specifically to a Higher Education Institution (HEI) and therefore engaged in a range of activities such as teaching and learning, supervision, advocacy, social responsiveness and research, while a *researcher* may have a more narrow range of duties related specifically to research and could be present in research producing organisations (RPOs) that are not necessarily HEIs (for example research councils like the South African HSRC, Human Sciences Research Council). Given the nature of this research as bound to a specific HEI, the terms will be used interchangeably although I have tended more toward 'researcher'.

Emerging researchers

At UCT the *emerging researcher programme* (ERP) is run through the Researcher Development (RD) cluster, based in the central Research Office, a support office that offers research administration and management services to researchers throughout the institution. The ORI has a regular, standing, series of three training sessions on the ERP calendar. On the surface, 'emerging researchers' are identified as "early career academics or those who have not yet established themselves as researchers"⁶. However, through engagement with the RD team, I have come to understand that they conceptualise the ERP in two distinct ways. Firstly, and more broadly, as a development programme that is open to academics at all stages of their career to pursue a range of learning and developmental opportunities. Secondly, and in a more targeted way, it is to provide developmental *and funding* support to a niche range of researchers, identified as:

- permanent academics at lecturer or senior lecturer level (or equivalent) who have never received a rating from the National Research Foundation or,
- permanent academics at associate professor or professor level (or equivalent) who are pursuing higher degrees (master's and doctoral).

⁶ <https://uct.ac.za/research-support-hub/researcher-development/emerging-researcher-programme-erp>

Participation in the programme is voluntary. A wide spectrum of potential participants ranging from early career researchers all the way through to senior researchers or professors was therefore possible. This conceptualisation meant that the range of participants was broader than what other institutions classify as 'early career researchers', where the focus is largely on number of years of experience. This has resulted in two distinct groups described in my participant synopses:

- A 'young researcher' is someone who is aligned with the general idea of an 'early career researcher', they are young in age (under 40 years) and have recently completed or are in the process of completing doctoral studies and are in the early stages of their careers.
- A 'mature researcher' is someone who is over the age of 40 years and has many years of work, professional or disciplinary experience. Two participants described as 'mature emerging researchers' are completing doctoral studies, one is a qualified medical doctor with a master's qualification while the other holds a master's qualification. Two hold doctoral qualifications, one recently re-joined academia after many years outside of it, while the other is an Associate Professor.

The ERP's broad conception as a development programme has resulted in a group of participants which is quite varied.

Research integrity

Horn asserts that "RI is about the validity and trustworthiness of all aspects of research and involves activities, conduct and choices at every stage in the research life cycle" (2022, p. 71). She notes that 'responsible conduct of research' (RCR) is often used as a synonym for RI and considers the phrase 'responsible research practices' (RRPs) as synonymous too (Horn, 2022). While I have tried to stick to RI throughout this dissertation there may be instances where these phrases are used to describe the same concept. The RI community generally understands the term quite broadly and to mean:

the use of honest and verifiable methods in proposing, performing, and analysing research; reporting research results with attention to adherence to domain specific accepted norms and standards; translating output to meaningful changes and following commonly accepted rules, regulations, professional codes and institutional policies. (UCT ORI definition used for training purposes)

Importantly, RI is about developing and practicing responsible behaviours and habits at all stages of the research process. It is a holistic view of how researchers conduct themselves and the attitudes they present on a day-to-day basis.

Research ethics

In contrast to RI, research ethics (RE), is characterised, for the purposes of this research, to mean the application of a common set of principles or values (autonomy, beneficence, and justice) to the design and conduct of a specific research project. RE considers the treatment of human and animal participants within the bounds of a research project. While it is bounded by a specific research project it is still possible to apply ongoing deliberation and reflection practices to RE, especially in the context of dynamic research environments. While others may disagree with this conceptualisation, especially those who are scholars of ethics, or bioethics, it is important for this research to apprehend this framing of the concept. Equally important to my conceptualisation is the “infamous history that has led to the prevailing situation today, where human-health research ethics is a highly regulated and quasi-legal field” (Horn, 2022, p. 75). The scholarly field of RE is comparable to that of RI as each is characterised by its own knowledge practices and values, some of these practices coming as a result of extensive regulation.

While scholars of RE and RI essentially work towards the same goal, the production of responsible research, they approach this goal from positions which are sufficiently different to require discrete terms. Conceptually, I imagine them as being represented by figure 1. This diagram will be further refined and incorporated into the analysis of data and thus warrants an introduction at this early stage.

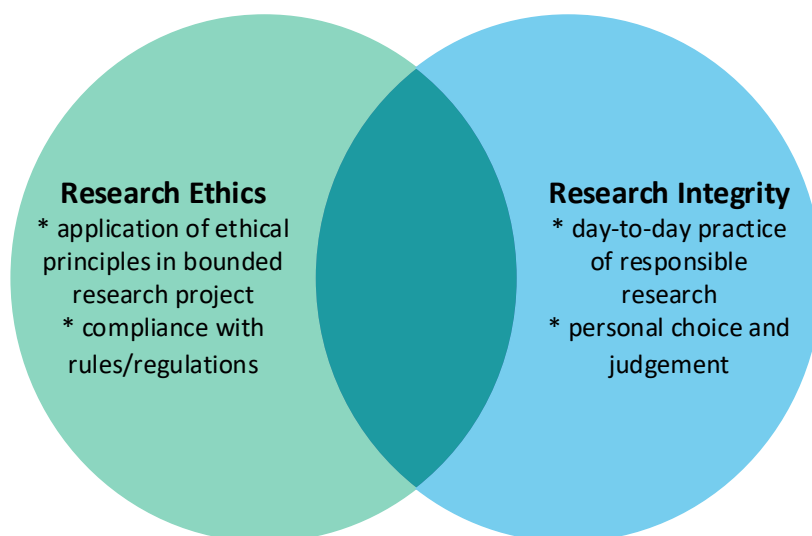


Figure 1: Visualisation of the relationship between RE and RI

Background and rationale

The South African Higher Education landscape is characterised by a history of segregation; attempts by the democratic government to both ‘right the wrongs’ of the past and respond to globalisation,

neoliberalism and the need to produce 'knowledge workers'; reductions in public spending and increased focus on 'managerialism' (Boughey & McKenna, 2021). While the shifting landscape has been experienced by all HEIs in South Africa, it is crucial to acknowledge that HEIs experienced these changes differently and this can often be attributed to their colonial and apartheid histories. There is no scope here to go into detail regarding the different types of institutions and their histories, so the following summary of the institutional context in which I have conducted my research (UCT) will have to suffice. UCT is a research-intensive⁷, historically white, English-speaking university (HWU); under apartheid it was given freedom (within the bounds of apartheid legislation) to make decisions on how teaching and research were conducted (Boughey & McKenna, 2021). As a result, 'academic freedom' and conduct is highly valued at UCT. UCT has a model of "institutional governance [which draws] on traditions of collegiality [that] dominated European universities" (Boughey & McKenna, 2021, p. 38) and originated in South Africa's colonial past. This has resulted in an institutional context where traditionally academics have enjoyed strong voices to guide (or contest) institutional practice.

In changes to HEIs brought about by the democratically elected South African government, institutions were incentivised to increase teaching and research outputs (Boughey & McKenna, 2021). The drive to bring in funding or subsidies means that in some cases universities are not "driven by the centrality of knowledge-production" (Boughey & McKenna, 2021, p. 127). This pressured research climate (best embodied by the phrase 'publish or perish') must be acknowledged as an important aspect of the academic project and may well impact on how emerging researchers understand their own identities in relation to disciplinary knowledge and therefore how they relate to RI values and practices. Boughey and McKenna argue that "the generic nature of staff development courses means that disciplinary differences as well as social and cultural differences are not sufficiently considered" (2021, p. 131) and that the degree to which academics will "be able to implement new practices will ... be enabled or constrained by prevailing social and cultural conditions" (2021, p. 132). Current RI training at UCT is 'generic' and depends on researchers recontextualising the knowledge when returning to their disciplines. This forms part of the motivation for this project – trying to understand researcher engagement with RI, so that ORI training practice can be better informed.

RI was born out of the need to prescriptively respond to malfeasance in biomedical research and originated as an idea in the United States (Steneck & Bulger, 2007, p. 829). This implies a number of normative assumptions: it has strong traditions in the biomedical and natural sciences and therefore largely adopts quantitative and (post-)positivist paradigms; it was born out of a need to *regulate* practice

⁷ "UCT is an inclusive and engaged research-intensive African university" (<https://www.uct.ac.za/>).

and behaviour. Horn notes that RI “frameworks have been developed in the Global North but are particularly relevant for researchers working in low- and middle-income countries (LMIC) and provide a good starting point for more in-depth discussions of RI and RE” (2022, p. 71). Increasingly, large international funding bodies are requiring proof of training in RCR. This creates a space where it is critical, for researchers to actively understand and engage with RI, not only because of local factors, but also due to the impact of international movements towards strengthening RCRs. Hence, as an ORI, it makes sense to develop a better understanding of how researchers engage with RI values in their disciplinary contexts, so that we are able to support and develop training initiatives that are suitably tailored.

UCT’s ORI is mandated to promote RCR across the institution and to uphold the highest ethical norms and standards. It plays a critical role in empowering researchers to conduct responsible research, to be aware of standards and to meet legislative requirements. It was established in 2012 in order to help researchers (particularly those based in the Faculty of Health Sciences) meet minimum compliance standards; to support Senate Ethics Committees; to provide support and guidance in policy development and revision and, to step in when responsible research standards or compliance requirements are not being adequately met. UCT’s ORI was the first such office to be established in South Africa with other HEIs taking different approaches. Other HEIs have appointed a Research Integrity Officer (RIO) who is primarily tasked with handling cases of alleged research misconduct and who often becomes a troubleshooting resource around policy advice and revision. Over time, each incumbent in the UCT ORI director position has grown and shaped the office to different degrees, depending on their expertise and experience. The ORI provides RCR training throughout the institution, a programme which is in its infancy, but which is growing. The amount and type of support offered to researchers by the ORI is dependent on researchers contacting the ORI and requesting assistance. This is due to the size of the team which consists of only four people and has limited capacity. The ORI collaborates with the researcher development (RD) team to offer an RCR training series. The ORI director argues that training is a critical and growing part of the ORI’s mandate and that there are different approaches to conceptualising and practicing RI. One approach is characterised as a ‘check-box’ approach related to submitting applications, receiving permits and complying with due-diligence requirements, this was also described as *“teaching codes or rule-based teaching”*. Another approach, which she advocated for, was an *“ethic of responsibility”* or a virtue approach, doing something because it is the right thing to do, making the ‘right’ choices as a result of an *“internal moral compass”*. She contended that the *“virtue approach is about getting the idea across that motivation and character traits can make a ‘good researcher’, not just a successful researcher”* and that it was important for researchers to recognise their own power in their ability to make choices while being aware of rules, codes, and

requirements. She noted that the international shift toward a virtue approach was probably first publicly considered in approximately 2015 at the 4th World Conference on Research Integrity (WCRI), and that this movement had grown over the following years especially as a result of European Horizon 2020 funded projects.

The shift in RI practice from a compliance-based approach to a virtue approach means that it is critical that the ORI develops a deeper understanding of what RI means to researchers and how they incorporate or enact RI values into their practice within their disciplines. Therefore, this research project, is a first step to trying to understand this dynamic, with the much more broad ambition (beyond the scope of the current project) of ultimately informing training practices. This early characterisation and description of current RI practices suggest that both epistemic relations and social relations are important in this space. This is supported by the ORI director who asserted that *"it's no good knowing all about conflicts of interest, if you're actually not going to change the way you've used certain practices and just carry on anyway"*.⁸

Research questions

It is against this background and context that I have positioned my research, driven by the following set of research questions:

- i. What factors do emerging researchers believe shape their researcher identities?
- ii. Does an emerging researcher's discipline or profession play a role in shaping their research identity?
- iii. Does the nature of the knowledge in an emerging researcher's discipline play a role in whether or not they view RI values as (in)compatible?
- iv. How do emerging researchers understand RI values within their disciplinary contexts?

These questions are designed to support the goals of my study, which include:

- i. Developing an understanding of researchers' perspectives and contexts, to inform RCR training practices.
- ii. Developing an understanding of the knowledge practices in disciplines and the associated engagement with RI.
- iii. Developing an understanding of perceptions of RI values and practices at UCT.

⁸ This background, contextual information was provided in an interview with the ORI director conducted specifically for this research.

Stakeholders who stand to benefit from this research are researchers themselves (with better focused and directed training interventions); the RI community (both locally and internationally) and also institutions (who might be able to use the research to reflect upon their own contexts and respond with appropriate RI training interventions).

Literature Review

Identifying gaps

The literature which informs this study comes from a diverse background and falls into three main themes (academic or researcher identities; RI topics and themes; teaching RI), which intersect at key points.

Henkel's work on academic identities shows the complexities of academic identity formation. She suggests that academic identity is fluid and multifaceted; driven to varying degrees by personal biographies, disciplines and context and, the interplay between teaching and research. This suggests that academics form their identities in many ways, and highlights that they are a heterogeneous group of individuals who form and are formed by the communities that they engage in or with (Henkel, 2000). King et al. show that there are many approaches to engaging with the this "slippery" topic (2014, p. 235). Research on academic identities highlights challenges and opportunities for developing a deeper and more personal understanding of how academics or researchers understand themselves and their disciplines. This project attempts to understand the role of knowledge and its interaction with the discipline through the lens of participant's researcher identity. Leveraging discussions around academic identity is used as a tool to uncover epistemic relations and social relations of the discipline, through the eyes of the participants. Henkel argues for the role of the discipline in establishing one's academic identity, while acknowledging that "the dominance of the discipline ... has come under severe challenge ... as nurturer of academic identity" (Henkel, 2005, p. 173).

Haven *et al.* (2019) assessed the impact of the institutional climate on the practice of RI using two separate factors: discipline and academic rank. Their core finding was that RI "climate is perceived differently by juniors and seniors as well as by researchers from different disciplinary fields" (2019, p. 11). Disciplines in this study were categorised as 'biomedical sciences', 'natural sciences', 'social sciences' and 'humanities', without devolving the analysis further. They found that 'humanities' scored low in many of their categories, concluding that "the difference was to be expected as regulatory bodies play a more important role in fields where rules and regulations are pivotal (such as biomedicine)" (2019, p. 10) and that RI "climate is perceived differently by researchers from different disciplinary fields" (2019, p. 12). This study did not consider specific RI themes and topics or values. Komić *et al.* (2015) conducted a content analysis of RI terms and concepts in an online database of disciplinary and professional codes. This study conflates the themes or topics of RI and its values. Both Haven *et al.* (2019) and Komić *et al.*

(2015) provide valuable contributions to the RI record, particularly in their efforts to investigate RI within disciplines. This type of enquiry speaks to the importance of understanding RI through a disciplinary lens. But these research contributions leave gaps, firstly Haven *et al.* (2019) suggest that it is worth pursuing enquiry into what is happening in the disciplines, although their 'disciplinary' boundaries might to be too broad. Secondly, there is a need to disentangle RI themes and topics from values demonstrated by both contributions. Finally, both papers proceed with the assumption that RI values (and even the themes and topics) are correct and are the universally accepted baseline that all researchers accept as a starting point.

The literature on RI has an exceptionally broad focus; two themes are significant in informing this research.⁹ The first relates to the different themes or topics that make up RI, the second relates to RI training and education. I have limited my literature review to these two focal points, a broader search would have been prohibitive. There is plenty of research on RI topics and themes, as argued above, these are occasionally conflated with RI values and practices. For example, Komić *et al.* identified "27 RI concepts" (2015, p. 3), which included authorship, conflicts of interest, dishonesty, and integrity among them, I argue that it is necessary to separate out topics and themes from values and practices as they represent fundamentally different entities. Values being "principles or standards of behaviour" (Oxford English Dictionary (11th ed.), 2006) while topics refer to the "subject of a text, talk etc." (Oxford English Dictionary (11th ed.), 2006). RI topics are the focus of much research, recent examples include Sørensen *et al.* (2021) and Labib *et.al.* (2021). Both empirical studies, which used quantitative approaches to establish which topic areas are important for RI agendas. Research which purposefully separates these from values and practices is less prevalent.

RI goes by many names, including 'academic integrity' or 'research ethics', Kalichman argues that "'responsible conduct of research' ... [and] 'scientific integrity' can effectively be considered synonyms" (2013, p. 381). Löfström *et al.* (2015) take a mixed methods approach to engage with the who and how of academic integrity teaching. They define "academic integrity as honesty in all matters relating to endeavours of the academic environment, which includes the teaching and learning of knowledge, skills, and values and the discovery and dissemination of new knowledge" (p. 436). Thus, explicitly linking academic integrity and RI as complementary concepts. While they do not consider the 'what' of RI teaching, their definition suggests that a combination of both topics and themes and values is necessary. Their definition includes all elements of Bernstein's 'pedagogic device', showing that they perceive RI to

⁹ Further discussion on whether to regard RI as a discipline or 'field of study' will follow. For now, it should suffice to say that the RI research record is researched from a number of perspectives, can present as multidisciplinary and is often multi-theme in nature. Tight's arguments (2014, pp. 94-97) in relation to Higher Education Studies are relevant here to RI and will be discussed further in the methods and methodologies section.

be relevant to HEIs in a holistic way, they also emphasise knowledge and its dissemination. An important lesson from their research is “what academic integrity is, how it is taught and how it should be addressed in higher education are complex and highly subjective constructs” (Löfström, Trotman, Furnari, & Shephard, 2015, p. 443). Critically, creating a space for us to develop an understanding of what RI looks like in the disciplines, and how individual researchers engage with RI values. It is worth noting that Löfström *et al.* looked not at RI values but rather perceptions of the roles and responsibilities in relation to RI training. The same authors reviewed institutional policies and strategies at their institutions on teaching RI and concluded that “the task ... is to provide a place within which deliberation on contested issues can flourish and a model that university teachers can use in their own learning and teaching situations with their students” (Shephard, Trotman, Furnari, & Löfström, 2015, p. 628). Löfström *et al.* (2015) and Shephard *et al.* (2015) speak to important aspects of RI training: who is responsible, the role of the academic, the role of institutional policies and strategies and how to teach RI. But they do not go into detail of the potentially differing views of the academics themselves in relation to how they perceive and enact their own disciplinary identities and the interplay of disciplinary practices with RI values.

The literature related to teaching RI takes many forms, some describe its origin and try to look forward to future practices, identifying gaps with little suggestion for plugging those gaps (Steneck and Bulgar, 2007 and, Kalichman, 2013). Steneck (2013) issued a call for a global harmonisation of RI training, assuming that the globe is a ‘homogenous space’. Others have looked at goals for RI training; Plemmons and Kalichman argue that there is not sufficient understanding of what RI training should be about, while highlighting the importance of contextualised learning. They concluded that generic learning can only go so far, and it is only by teaching in contextualised ways, with the involvement (and leveraging of) supervisors or research staff that the hidden curriculum (knowing and doing) can be adequately passed on (2013). The same authors looked at differences across four disciplines and argued that there is “a compelling argument for multi-disciplinary training in RCR ... Teaching of RCR should be grounded in a recognition of the variations that occur across disciplines as well as among individual researchers” (Kalichman, Sweet, & Plemmons, 2015, p. 1092). Increasingly, RI researchers are being drawn to notions of discipline specificity, for example, Labib *et al.* have advocated for “the need for research institutions to develop a comprehensive training plan ... [which] tailors training to disciplinary-specific contexts” (2022, p. 255). In reviewing training in RI for doctoral students across Europe, Abdi *et al.* “recommend that institutions provide education on research integrity for PhD students” (2021, p. 16). This raises other topics for consideration: what should be catered for centrally and what should take place in the disciplines? And the cognate issue of formalising RI training? The second question is beyond the scope of this project and recent research originating in Europe suggests that “a whole institutional approach to RI, embedded within local jurisdictions, rules, and practices” (Evans, et al., 2022) is most informative.

The first question speaks to the core of this project, the interrelation of disciplinary contexts and engagement with RI.

Finally, we come to the perceptions and interpretations of RI by researchers. Shaw and Satalkar invited “researchers to explain what they themselves understand research integrity to mean” (2018, p. 80). Their findings demonstrated that “some participants saw integrity primarily as a virtues..., while others saw it more as a stance or attitude ... or an action” (2018, pp. 87-88). This study is key to moving away from conflating RI themes and topics and values. It focusses on researchers’ interpretations of RI. Participants defined RI in terms of abstract values and practices, rather than relating it to topics or themes. And while this shift is useful for the purposes of this study, it still has its limitations. Those who participated in the semi-structured interviews were drawn from health and life sciences, this resulted in responses expounding an objective, unbiased truth (expressed as “hard facts” (Shaw & Satalkar, 2018, p. 82) or “neutrality” (Shaw & Satalkar, 2018, p. 84)), seemingly unmediated by social factors. Huybers *et al.* (2020) investigated responsibilities and enablers of RI. Concluding that a “one-size-fits-all approach to research integrity support is not expected to be successful” (p. 168) and that a “qualitative study might help interpret the results and provide further insights” (p. 168). They specifically highlight ‘academic backgrounds’ as one factor that might be responsible for different perceptions of RI and emphasise that this understanding would “inform the crucial issue of suitable pedagogies required for successful targeted interventions” (p. 169).

Therefore, this research study aims to speak to the gaps highlighted by previous RI research and is driven by my own curiosity. In probing issues around personal understandings of researcher identity; the extent to which emerging researchers form their identity through or with disciplinary meditation and the bases on which disciplinary knowledge is legitimated and legitimates researchers’ beliefs, values and practices, will give me a platform to explore engagement with RI and its entrenched values and practices. By exploring how emerging researchers at UCT engage with RI in their disciplinary contexts, I hope to begin to speak to some of the less explored areas of RI research and offer comment on how RI might engage with researchers in a more productive and consequential way.

Conceptual framework

Underpinning the dominant tool that it used for data analysis, that is the dimension of *specialisation* in Maton’s Legitimation Code Theory (LCT) toolkit, is a range of Bernsteinian concepts.

Bernstein's *pedagogic device* allows for the analytical separation of the field of knowledge production, while still being able to view knowledge and its processes or procedures in a holistic way. Bernstein used the pedagogic device to describe the principles by which knowledge was ordered. "He suggested that this device constituted the relay or ensemble of rules or procedures via which knowledge (intellectual, practical, expressive, official or local knowledge) is converted into pedagogic communication" (Singh, 2002, p. 573). While the *pedagogic device* is not pervasive in my work, it does form a foundation upon which my data analysis grew and therefore warrants a brief mention. The *pedagogic device* is a complex series of rules, fields, and processes, which Bernstein argues "symbolically regulate consciousness" (Bernstein, 2000, p. 37). For the purposes of this research the *fields* of the pedagogic device are of particular importance. The field of knowledge production (akin to research), the field of recontextualisation (associated broadly with the construction of the curriculum and the teaching environment¹⁰) and the field of reproduction (associated with teaching and learning practices) (Bernstein, 2000). While I am specifically interested in 'research' and thus the field of knowledge production, it is worth bearing the remaining elements of the device in mind. For those in academic positions in HEIs the pedagogic device largely represents their whole field of practice and therefore participants refer to the whole device, even in the context of questions related to research. It can be challenging to disentangle practice in such a clearly defined way (for example in the relationship of a postgraduate student and a supervisor) owing to the reciprocal nature of the influence that flows between the various fields of the pedagogic device.

Singulars, regions, and generics: these play a subtle role in my data and need to be recognised. *Singulars* are described as "knowledge structures whose creators have appropriated a space to give themselves a unique name, a specialised discrete discourse with its own intellectual field of texts, practices ..." (Bernstein, 2000, p. 52). In this research a singular most closely aligns with a 'discipline', the phrase that I will use throughout. There are, of course, different perceptions of disciplines, and this too is noticeable in the literature¹¹ and also the way participants describe the space in which they operate. For example, someone outside of "Engineering" may consider it its own discipline, but to an engineer the distinctions are more subtle and split along lines of specialisation. Hence an engineer might argue that 'civil engineering', and 'electrical engineering' are disciplines in their own right and have discrete discourses. It is critical in reading this work to know that participants may present a different understanding of what a discipline is, to a scholar who is based in Education.

¹⁰ Singh (2002, p. 573) indicates that "through recontextualisation, a discourse is moved from the original site of production to another site, where it is altered and related to other discourses". This is useful to bear in mind in the context of researchers practicing RI, and the requirement for them to interpret and recontextualise RI values and practices and how RI relates to their own disciplinary context.

¹¹ cf. Haven *et. al.*, 2019, who describe 'biomedical sciences', natural sciences', 'social sciences' and 'humanities' as disciplines

Regions “are constructed by recontextualising singulars into larger units which operate both in the intellectual field of disciplines and in the field of external practice” (Bernstein, 2000, p. 52). They are often closely associated with professions, such as medicine, their boundaries are variable, depending on the needs of the region and how they are recontextualised in different social spaces (Bernstein, 2000). Regions are visible in some of the interview data, particularly in relation to the participants who have a background in the Health Sciences.

Generics usually sit beyond disciplinary spaces and are often associated with more generic or workplace skills along the lines of critical thinking, research methodologies and competencies that cut across any *region* or *singular*. Bernstein notes that generics “are directly linked to instrumentalities of the market, to the construction of what are considered to be flexible performances” (2000, p. 55). There is an argument for RI to be considered a generic, particularly in the case that the expected competencies and skills cut across the boundaries of regions and singulars.

However, for the purposes of this research and positioning RI, I am inclined towards Tight’s description of a *field of study*, as opposed to Bernstein’s descriptions of a region or a generic. This positions RI somewhere in between a singular and a region. Davies and Devlin outline the following as features “often attributed to an academic discipline:

- the presence of a community of scholars,
- the existence of a tradition of history or inquiry,
- the presence of a mode of enquiry that defines how data are collected and interpreted,
- the existence of a definition of the requirements for what constitutes new knowledge and
- the existence of a communications network” (2010, pp. 6-7)

In relation to Higher Education Studies, Tight argues that it is “probably more useful to regard [it] as a field of study, researched from a number of perspectives... this makes it a multi-disciplinary field of research” (2014, pp. 94-95). I see many parallels with RI: there is a community of RI scholars; there is a growing tradition of enquiry and there is a communications network, see for example the WCRI.¹² However, while RI certainly originated in the biomedical sciences and from a positivist paradigm,¹³ there is no strict definition of what constitutes new knowledge, nor is there widespread acceptance of methods of data collection and analysis. It is true that there are preferences demonstrated by the scholarly community, however, it is also true that RI scholars are drawn from a wide range of disciplines,

¹² <https://wcrif.org/>

¹³ Disciplines have, in their own ways, been grappling with the integrity of research prior to the coalescing of RI as a field of study. This disciplinary engagement may not fit into the generally accepted origin of RI as presented in this dissertation but highlights the notion that researchers confront issues around responsible research and integrity in a multiplicity of forms. This may underpin their engagement with RI within their discipline and more generally but is beyond the scope of the current project.

from contexts regarded as administrative or management offices in HEIs and even journal editors and publishers. Therefore, I have conceptualised RI as a *field of study* rather than a Bernsteinian region.

Building on Bernstein's work, Maton developed the LCT toolkit, which is "a multidimensional conceptual toolkit for analysing actors' dispositions, practices and contexts within a variegated range of fields" (2014, p. 17). LCT "enables knowledge practices to be seen, their organizing principles to be conceptualized, and their effects to be explored" (Maton, 2014, pp. 2-3). Further to this, and expanding on Bernstein's 'code theory', Maton developed the dimension of *specialisation*. Maton describes 'code theory' as highlighting the "structuring significance of knowledge structures for ... fields" and further argued that "knowledge is a structured and structuring structure" (2014, p. 23). Out of this came the dimension of *specialisation*, described as:

"epistemic relations between practices and their object or focus ...; and *social relations* between practices and their subject, author, or actor. For knowledge claims, these are realized as: epistemic relations between knowledge and its proclaimed objects of study; and social relations between knowledge and its authors or subjects" (2014, p. 29).

Maton outlines that *epistemic relations* relate to "*what* can legitimately be described as knowledge" while *social relations* relate to "*who* can claim to be a legitimate knower" (2014, p. 29). The dimension of specialisation offers a means to categorise identities by evaluating both epistemic relations and social relations. In this context the tool permits an evaluation of which specialisation code the researcher's disciplinary identity is most closely associated and therefore a comparison with RI's specialisation code. Understanding a discipline's position should enable a theoretical understanding of engagement with RI and offer interpretive insight into whether the values are (in)compatible, leading to either integration or rejection; practice, or contestation. LCT tools "are not cookie-cutter applications; they involve creative enactment in dialogue with the specificities of their objects of study" (Maton, 2014, p. 16). In developing specialisation dimensions for my data and therefore a translation device, I have taken inspiration from Jacobs and van Schalkwyk (2022). Their approach to differentiating types of knowledge and knowers was informative and stimulated deeper engagement with my own data.

While bringing together the above framework and reflecting on my own position as RI manager at UCT, I came to speculate that there might be dimensions that could be constructed from my own experience that could prove useful in analysing and interpreting the data. I have imagined these dimensions as a '*spectrum of engagement*', which have two layers of discourse at play. The first is that of (in)compatibility and the second is that of implicit versus explicit. Like Maton's dimensions, these should be pictured

along a plane of having stronger or weaker values and should be understood as another analytical tool being used to analyse the data. The theorised spectrum will be tested through data analysis.

Methods and Methodology

Research Design

Integrating theories and concepts

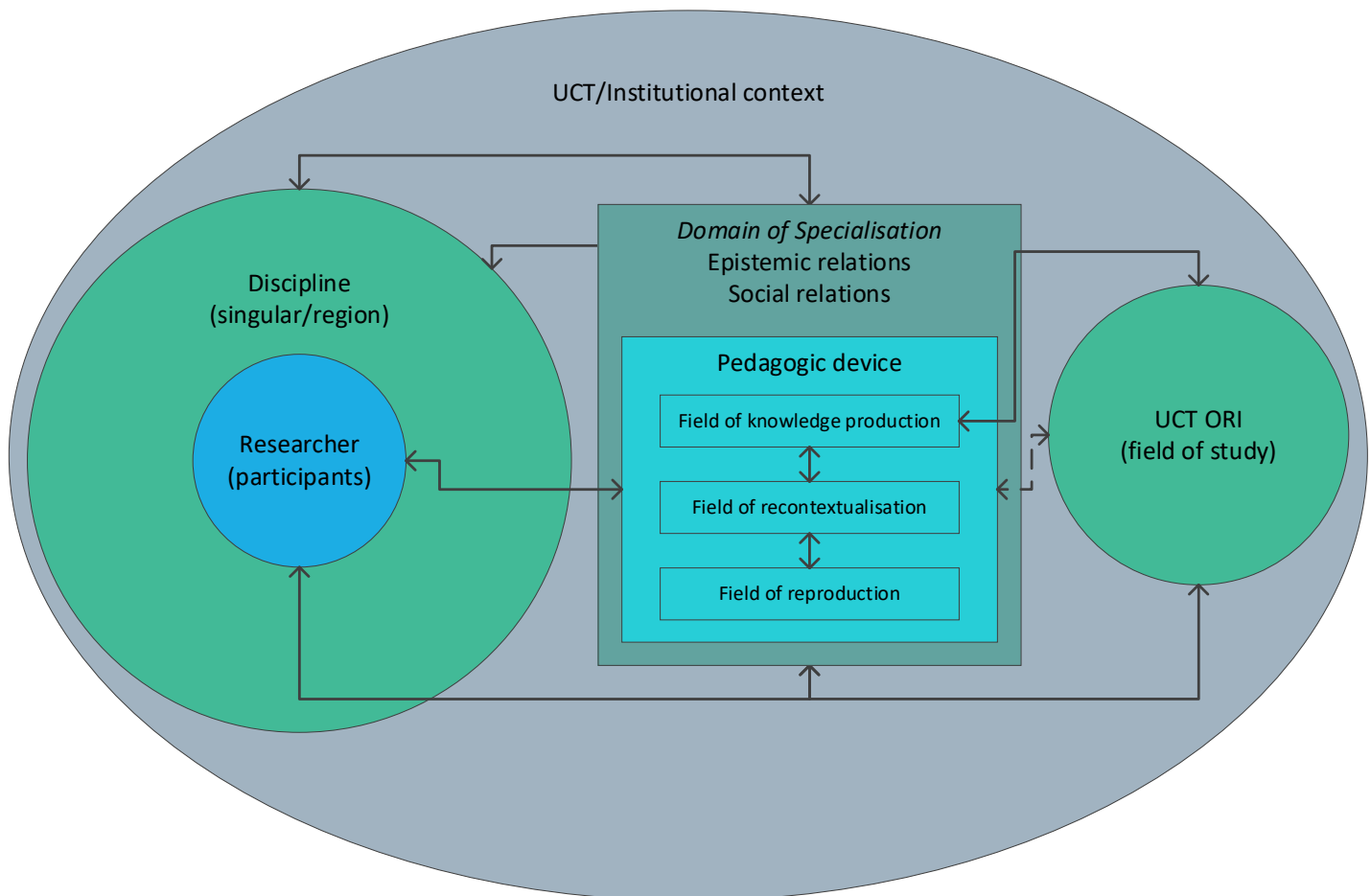


Figure 2: Visualisation of theoretical tools, context, and relationships

In deploying the theoretical tools and frameworks it helps to visualise the relationship that the pieces have to and with one another. Figure 2 shows the relationship between the tools, the participants, and the context in which they are situated. The *pedagogic device* is a Bernsteinian model, which informed the development of Maton's LCT toolkit and the domain of *specialisation*. The participants are studied at the individual level, but they are located within the context of their discipline and the institution. The participants themselves touch the pedagogic device in the different fields, to varying degrees, while this project is concerned with 'researcher identity', participants are engaged with the entirety of the device in their capacity as academics at an HEI. They are engaging with epistemic relations and social relations

on a personal level and also through the context of their disciplines as an added level of mediation or conditioning.

The other element of this project is the ORI, which is responsible for providing RI training. The ORI operates in the context of the institution, and it is through this institutional relationship that RI training and engagement with researchers and disciplines occurs. This training is largely aimed at supporting researchers in the 'field of knowledge production', however, as an 'educational intervention', the ORI does, to a lesser degree, utilise all the fields of the pedagogic device – hence the dotted line, showing a less obvious relationship. The link that the ORI has to the pedagogic device is most clearly associated with the field of knowledge production in the more 'generic' support that the field of study provides to/for researchers. The pedagogic device can be conceptualised as a tool through which the ORI communicates with its most important stakeholders, the researchers, rather than a description of the ORI's practices. The ORI, and RI as a field of study, touches the domain of *specialisation* in both having its own specialisation code, and, as this dissertation will argue, needing to better understand disciplinary and individual specialisation codes to leverage training interventions more meaningfully.

This graphic does not depict extra-institutional relations. The ORI is embedded in RI as a field of study, this field has its own specialisation code, and this relationship is not displayed. So too, the relationship of disciplines to their external disciplinary spaces, outside of the institutional context are not displayed. These relations were purposefully omitted as this project is predominantly interested in the engagement of individual researchers with RI in the context of their institutional disciplinary spaces. That is not to say that these extended relationships do not exist and do not represent additional mediating forces, simply that it is beyond the scope of this research.

Purposeful sampling

Participants were drawn from researchers who had previously completed ORI training through the ERP. The choice of participants was purposeful, people were invited because they had a particular set of knowledge or skills, based on prior engagement with the ERP-ORI training opportunities, one might therefore assume that they were in some way, familiar with RI values. In the ORI training sessions, I make use of the Singapore Statement, which focusses on the values of honesty, accountability, professional courtesy and fairness and good stewardship of research. The Singapore Statement [[Appendix A](#)] is a widely accepted part of RI as a field of study and used extensively, it therefore offers an opportunity to probe whether these normative values are ones that my participants readily identified with and used to

any extent. Additionally, as self-identified¹⁴ 'emerging researchers' they may still be grappling with understanding their own researcher identities. Encouraging participants to reflectively confront their researcher identity proved useful for those who were interested in developing a deeper understanding of their own selves. This is supported in the literature: "the island map is a potentially self-revelatory means of expressing academic identity which new lecturers may find useful when used in conjunction with reflection" (King, et al., 2014, p. 253). Time spent participating in the research process proved to be productive for the participants, thus offering a form of reciprocity.

Accessing and identifying participants

In order to identify potential participants, I contacted my colleagues in the ERP. They provided me with a list of researchers who participated in ORI interventions, with email addresses. When it came to selecting a group of potential participants to invite, the following logic was applied:

- People who completed one or more ORI webinar over the period August 2020 to June 2022. This time range applied as previous ORI interventions in the ERP were not approached in a programmatic way. Early in 2020 I spent time reformulating the training interventions (to become a series of 3 blended sessions on different topics) and launched them, along with accompanying online modules in August of 2020. The stop date of June 2022 represents the end of the first semester offering of the series of the year in which I collected data.
- 61 potential participants were identified, comprising of 45 female and 16 male researchers.
- 27 potential participants were based in the Faculty of Health Sciences; 10 in Humanities; 8 in Commerce; 6 in Science; 5 in Engineering and the Built Environment and the remainder (5) in the Centre for Higher Education and Development and the Research Office. There were no potential participants in the Faculty of Law.

Three rounds of invitations were emailed to potential participants, approximately one month apart. Only those who opted-in to the research were sent further details. Out of the 61 potential participants, 7 people opted-in to the study. The demographic profile outlined above was roughly represented in the volunteers who ultimately participated: all 7 identified as female; 3 were based in the Faculty of Health Sciences; 2 Engineering and the Built Environment and one each Commerce and Humanities.

¹⁴ In other words, those who have chosen to voluntarily participate in the 'emerging researcher programme' regardless of their age or stage of career,

Pre-interview preparation

Ahead of the interviews, participants were asked to prepare a creative and reflective exercise [Appendix B]. This was based on the “academic islands” exercise, described by King and Billot (2016) and King *et al.* (2014), adapted to suit this research. I did not stick rigidly to the steps King *et al.* (2014) prescribed but embodied the spirit of their approach. They argue that “maps are authentic representations of identity as shared by their authors” (King, et al., 2014, p. 262).

In the exercise participants were asked to imagine that they were, or were on, an island, and then to identify attributes, characteristics or features that defined their researcher identity, as they pertained to their discipline or disciplinary identity. They were asked to draw this island and to develop an accompanying, reflective commentary. During the interview, I invited participants to discuss the map and commentary, and probed how or if RI values fitted on their map. In the final step, following the discussion of RI values, I asked them if they wished to revise their map and/or commentary. All participants were specifically asked for permission to include their island maps and commentaries as research artefacts, all consented.

I received these artefacts ahead of the interview to allow me to prepare any clarifying questions. The participants found the exercise a challenge to different degrees, with some contesting the metaphor of the island as they perceived it to remove them from a community which was crucial to shaping their identity. Specifically, Joyce commented that she *“wasn’t sure [she] liked the task”* and that *“the island was a metaphor which kept me separate from others”* ultimately conceding that *“as an obedient research subject, I engaged wholeheartedly with it”* and that *“I had great fun with your metaphor, even though I resisted the whole idea of a separate island”*. Lerato was *“stumped by the word island... because initially [she] saw it as a small spot in this vast ocean”* and was concerned with how people were going to get to the island and what was supposed to happen on the island? She realised that she *“needed to step back and think about what my research identity is”* noting that she struggled with the word identity. Despite the preparation of the exercise proving challenging for some participants, all remarked that it was instructive, supporting the notion that time spent in the research process would be informative. Brook commented that:

“... it did make me think about a lot of things. So, it was good for me too. ... doing the reflection exercise or doing the exercise and then realising wait, I have no place to write. And then in talking to you, I have no place to eat. It's funny because in the last little while I've just come back from sabbatical, and I've been going into work, and I've been struggling to find time for those two things.”

While the exercise proved to be challenging, participants indicated that making time to be active and purposeful in reflection had given them some insight into their practices. This reflection laid a foundation that enabled a richer more productive interview and was something which each of them remarked would change over time.

Interviews

Interviews were semi-structured, question prompts can be found in [Appendix C](#). The interview questions were inspired by Shaw and Satalkar's (2018) work. Their work sought to "explore what research integrity actually means to researchers" (2018, p. 80) and therefore provided an approximation of the type of questions that might be relevant to my own research.

In conducting this research, I have attempted to align research process with what Mertens described as a *constructivist paradigm* (also sometimes an interpretivist paradigm). Mertens argues that "knowledge is socially constructed by the people active in the research process and that the researchers should attempt to understand the complex world of lived experience from the point of view of those who live it" (2015, pp. 64-65) adding that "research is a product of the values of researchers and cannot be independent of them" (2015, p. 65). In positioning the research process in this way, I hoped to remain flexible to see where the interviews would lead and how the participants would share their experiences and reflections, while being fully aware of my role as both research student and RI manager at UCT.¹⁵

The interview process was built around (i) understanding the participant's context, (ii) discussing the creative exercise with questions designed to probe participants' disciplinary identity as a researcher and, (iii) engagement with RI values. These questions outlined participants' context and aimed to build as complete a picture of disciplinary knowledge (and how it operates) as was possible. The data will provide an opportunity to test the spectrum of engagement presented above. The manner in which disciplinary knowledge and practices structure the epistemic relations and social preferences of the participants is a vital part of the data analysis for this project.

Interviews were recorded and auto-transcribed, using MS Teams; five of the seven took place via MS Teams. The remaining two in-person interviews were recorded using a voice recorder and then MS Teams to auto-transcribe an initial transcript. I proofread, edited, and checked each of the seven

¹⁵ While the data was generated using a constructivist and interpretivist approach, the analysis tools are based in a different paradigm. Notably the conceptual framework and LCT tools used for data analysis are based in a social realist paradigm. This shift was necessary in order to unpack the epistemic relations and social relations of the knowledge and actors in their disciplinary spaces and to attempt to understand the influence that this may have on engagement with RI.

transcripts, referring to the recordings to ensure accuracy and retaining content. A sample of interview transcripts are available as [Appendix D](#). Island maps and participant synopses are available as [Appendix E](#).

An eighth interview was conducted with the Director of UCT's ORI. This interview was intended to contextualise the ORI, and to develop an understanding of where RI might be positioned on the specialisation dimension.

Thematic analysis

Once I had gathered and collated the data I embarked on an iterative, abductive thematic analysis. Overall, I undertook four readings of the data. The first with a 'soft gaze' to identify themes and characteristics. I captured these themes into a spreadsheet and highlighted parts of the text I suspected might be significant. In a second reading, again with a 'soft gaze', attempted to provisionally position issues related to epistemic (ER) and social relations (SR). The third reading was a more focussed attempt to understand the underlying messages that the participants were portraying in relation to ER and SR, and to start to develop dimensions that might inform a translation device. A fourth reading was undertaken following the development of the translation device. This fourth reading allowed me to contextualise the interviews in this framework and develop a deeper understanding. Each reading, whether soft or focussed, provided me with an opportunity to identify how the participants were relating to RI.

Responsible research practices

I have endeavoured to incorporate responsible research practices at every point of this research, from the conceptualisation of the project through to sharing my findings.

I developed the proposal in consultation with my supervisor and submitted it to the School of Education Research Ethics Committee. The committee approved the study and one modification with the reference number EDNREC20220301. Following this, I sought permission to engage UCT staff from the Human Resources Department, as required by UCT policy. Only after all the necessary permissions had been obtained did I contact my colleagues in the ERP to access a pool of potential participants. Participation in this study was voluntary and only proceeded following an informed consent process. The informed consent form was emailed to participants ahead of the interview, to enable them to engage with it in their own time. Before interviews commenced, I worked through the informed consent process, offering

participants the opportunity to ask clarifying questions, or to withdraw. Following the interview, participants had the additional opportunity to provide consent to review transcriptions and data analysis and to include their island maps and reflective commentaries as research artefacts. Exemplar informed consent forms are included as [Appendix F](#). Each participant was given the opportunity to pick a pseudonym and their preferred pronouns. Pseudonymisation was selected as a method as it allows for development of meaningful narratives.

Each participant who wanted to check the interview transcript was given the opportunity to do so. This allowed participants to redact sections that presented discomfort and to ensure that the appropriate pseudonymisation and anonymisation had taken place. Thematic content analysis took place only after the transcripts were approved. Following initial analysis, I developed a 'participant synopsis' for each of the participants. These were a means for me to engage deeply with their data and write up a summary of my impressions, in line with the theories and concepts being used. This synopsis was shared with the participants for them to review the conclusions that I was able to draw from the artefacts. This provided an opportunity for participants to ensure that my analysis was fair and gave them an opportunity to make any corrections. It was only after this process was completed that the drafting of the dimensions and translation device took place. These steps supported conduct of the research in a constructivist/interpretivist paradigm, constructing knowledge with the participant out of their experiences, and seeking confirmation that my own interpretations were reasonable or appropriate.

As a final thought on embedding responsible research practices, it should be noted that I wanted the process to be productive for the participants too. This informed my selection of the island map and reflective commentary exercise. The process created space for the participants to reflect on their own space and practices and unpack the dynamic nature of their own identities. This purposeful reflection and the self-awareness that it brought were noted as being valuable and some suggested that they may experiment with the exercise as their careers progress. Coral noted *"once I got started. I was like, oh, this is actually fairly useful because it's not something I've thought about or explored before. So, I did find the exercise a lot more useful than I originally thought... It is something that I'm going to keep in mind, as I develop my career."*

Reproducibility and replicability

This research was conceptualised as a project intended to support the development of a minor dissertation for master's studies. As such, it is purposefully small and manageable. The theoretical and

conceptual framework are available as part of the sociology of education discourse and supplemented with my own RI knowledge and experiences and the published record of RI research. The development of the dimensions and translation device was iterative and will be outlined, with support from the research artefacts in order to enable transparency and imaginative engagement with the data. This study may not be generalisable to or directly replicable or reproducible in other spaces. However, it is my position that clearly outlining the context of the research, and creative engagement with the tools will enable others to deepen their understanding of their own contexts. As I have found the work of others inspired various elements of this project, so I hope that it might inspire others to uncover less explored areas of RI research.

Limitations

Participants

Katsarov *et al.* in a meta-analysis of RI training strategies concluded that “our data ... suggests that learners participating in courses voluntarily, tended to acquire more knowledge than participants of mandatory courses” (2022, p. 951) further proposing that “greater motivation of voluntary (self-selected) participants may explain this effect.” (2022, p. 951). This phenomenon will also have had an impact on my research. It is possible that my participants, who opted to engage with RI training, were more open to learning about RI values and practices, and that they may well be the type of people who are ‘naturally’ more inclined to integrate rather than contest RI. This begs the question of whether my research may be skewed by the natural inclinations of the participants and also whether I, as the researcher, who also fills the role of RI manager at UCT may be more likely to elicit ‘positive’ responses from them? Only further research using the same, or similar approaches, with a larger cohort of people, including those who have not participated in any RI training will be able to properly address the first question. However, on the matter of my own influence over the participants, my approach was to address matters of disciplinary ER and SR, followed by the understanding of their own researcher identities and only then to include a discussion on RI. For many participants, the values they identified as important to their own practice were well aligned with general RI values, even before the discussion turned to RI. This suggests that their own habits and dispositions, potentially influenced by their disciplines, provides a baseline level of ‘conditioning’ into responsible habits and behaviours, and suggests that my own influence as a researcher was less prominent than it may otherwise have been. It is also in line with Katsarov *et al.*’s argument that people engaging in voluntary training were more amenable to RI values and practices. The research further considers whether this amenability is presented explicitly or implicitly.

Cohort size

In the interests of keeping this project manageable, seven participants and a contextualising interview seemed like a reasonable number to establish a baseline of meaningful data.¹⁶ It is worth noting that on Faculty splits, three participants originated in the Health Sciences, two in Engineering and the Built Environment and one each in Commerce and Humanities. While this distribution is reflective of the pool of potential participants, as already discussed, it is also worth adding a “regulatory” environment layer. In the Health Sciences region, researchers are subject to legislative and professional regulations, which suggests that there may be more of a ‘push towards’ RI for these participants than may be the case for those based in other disciplines. A larger cohort size, with better representation from Faculties across the institution, and representing people who have both engaged in RI training and not, might be better positioned to address this matter. Therefore, this research could be framed as a pilot study, to refine tools and to build a better understanding of context before embarking on more extensive research endeavours.

Conceptual framework

The tools I have used are drawn from a patchwork of interrelated sociology of education theories and concepts and supplemented with more general methods used in research regarding academic identities. King *et al.* (2014) note limitations of the academic islands exercise. The first is that “it is not discipline but self-view which determines how identity is visualised” (p. 265). I contend that including the explicit instruction relating to discipline provided sufficient nudging to foreground this in the minds of participants as they created their maps. Secondly, King *et al.* suggest that participants share only what they want to or feel comfortable sharing (2014, p. 254). This limitation is true for any qualitative research where participants are interviewed. In operationalising the dimension of specialisation and my own early ideas, I have tried to hold on to Maton’s words of encouragement to ‘creatively enact [LCT tools] in dialogue with the objects of study’, (2014, p. 16).

¹⁶ 7 out of 61 possible participants represents an 11.5% response rate.

Data Analysis

Outline

The data for this study took multiple forms. The firstly is the 'island map' developed by each participant, secondly the accompanying reflection, and thirdly the interview (and transcript) itself. A separate interview was conducted with the ORI director aimed at providing an ORI perspective.

Seven researchers participated, representing a range of disciplines, ages, experience, and qualifications. All participants identified as female and are listed alphabetically, by pseudonym, below.

- Ashley, a mature researcher with a doctoral degree in Social Development, currently working in the 'umbrella' discipline of Public Policy, but largely focussed on teaching generic research methodology content. Ashley recently returned to academia after many years working in private, non-governmental, non-profit, and governmental sectors.
- Brook, a mature researcher with a doctoral degree in Biological Anthropology and Anatomy and working and researching in the same disciplines.
- Coral, a young researcher with a doctoral degree in Medical Virology and working and researching in the same discipline.
- Isla, a mature researcher, and medical doctor with a master's degree in Palliative Care and registered for a doctoral degree in Family Medicine¹⁷, who is working and researching in the same discipline.
- Jean, a young researcher in German Studies with a doctoral degree in German Studies, working and researching in the same discipline.
- Joyce, a mature researcher with a master's degree in Education and Development. She is working in the Faculty of Engineering and the Built Environment in professional communications, teaching generic communication and ethics content, practicing her discipline within a different discipline. Joyce is currently completing a doctoral degree.
- Lerato, a young researcher with a master's degree in Civil Engineering and registered for a doctoral degree in the same discipline. She is currently working and researching in the same discipline.

As suggested previously, this study should be viewed as a pilot study to test (i) the operationalisation of the conceptual and theoretical framework, (ii) emerging theories and (iii) to refine approaches. While

¹⁷ UCT does not currently offer a doctoral qualification in Palliative Care

it is possible to imagine that these participants might act as 'exemplars' for their disciplines, I caution against such a generalisation. Conceptualising what features and characteristics an ideal disciplinary representative might display is not possible with single examples and would need a far larger sample to 'average' out knowledge practices and values. Indeed, Davies and Devlin highlight that "differences among the disciplines are as important as the things that bind them" (2010, p. 7). Henkel (2000), too, supports the argument against disciplinary generalisation owing to the complexity and fluidity of academic identities driven by a wide variety of factors both internal and external to the discipline.

Translation device

Following iterative data engagement, the translation device (table 1, pages 39-40) was developed. The first column describes the different specialisation relations visible; the second describes the different types of relations at play in the epistemic domains and social domains and the third column lists exemplars. The ER dimensions raised three separate possibilities which presented epistemologies as relatively strong or weak, respectively; they are labelled '*knowledge as concept*', '*knowledge as practice*' and, '*knowledge as reliable*'. The SR dimensions raised three distinct social practices as relatively strong or weak, they are labelled '*knower as inherent attributes*', '*knower as awareness*' and, '*knower as compliant*'. This device provided a more structured approach to apply to the data in a final iteration of review and analysis.

Using the dimension of specialisation, it is possible to plot where participants have suggested their discipline might be situated. Maton outlines four possible codes as visualised on the following page.

- A *knowledge code* where actors possess specialised knowledge, seen as the basis of achievement. Knowledge codes present as having relatively strong *epistemic relations* (ER+) and relatively weak *social relations* (SR-).
- A *knower code* where the attributes and dispositions of the actors are valued and seen as the basis of achievement. Knower codes present as having relatively weaker *epistemic relations* (ER-) and relatively strong *social relations* (SR+).
- An *elite code* combines both specialised knowledge and dispositions of the actors as the basis of achievement. Elite codes present as relatively *strong epistemic relations* and *social relations* (ER+/SR+).
- A *relativist code* where neither specialised knowledge nor the attributes or dispositions of actors are seen as the basis of achievement. Relativist codes present as having relatively *weak epistemic*

relations and *social relations* (ER-/SR-). (Maton, Knowledge and Knowers: Towards a Realist Sociology of Education, 2014, pp. 30-31)

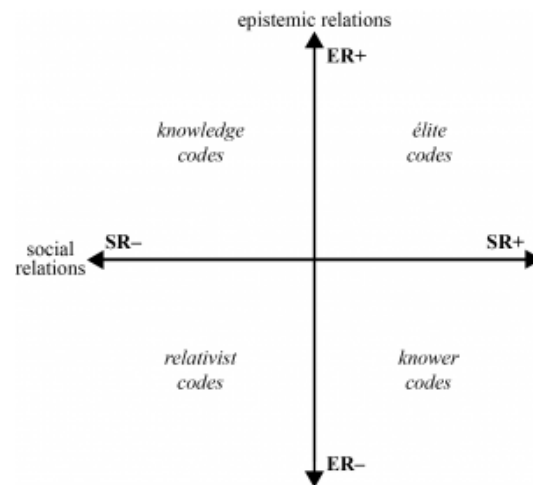


Figure 3: Specialisation codes

Engagement with participant interviews suggests the following placement of the disciplines; this includes the placement of RI, as described by the ORI director.

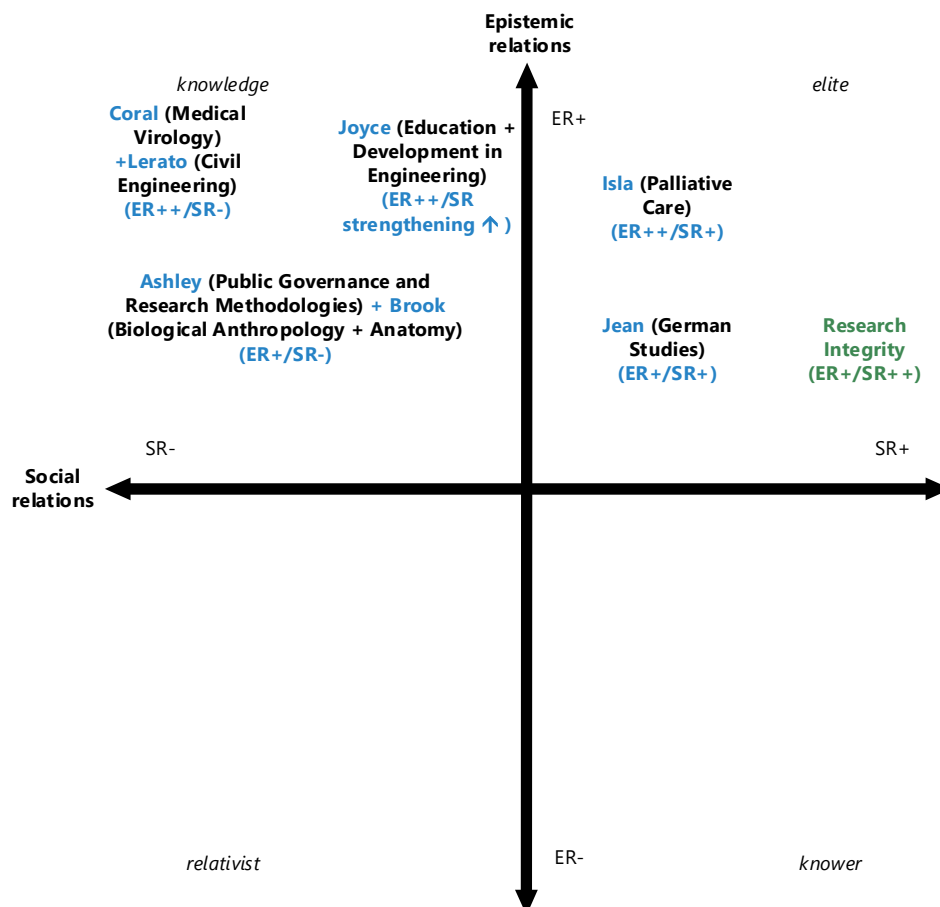


Figure 4: Preliminary placement of disciplines on the specialisation plane

The majority of the disciplines under consideration were presented as favouring ER thus being classified as having a *knowledge code*; the participants conveyed that possessing specialised knowledge was viewed as the most important aspect of legitimation in their discipline. Those whom I classified as being located in a *knowledge code*, showed varying degrees of valuing SR, some personally wanting to strengthen SR. Joyce who places her own discipline of 'Education and Development' in a *knower code* is located in a discipline (Engineering) which overtly values ER practices, hence her placement in the *knowledge code*. She actively integrates *knower code* practices in the generic teaching space, and therefore is attempting to strengthen the SR of her pedagogic space (SR↑). Two participants presented their disciplines as valuing both ER and SR and are therefore positioned in an *elite code*. RI is also identified as an *elite code*, the director suggested that a combination of knowledge, attitudes and behaviours was important to the field and indicated that ultimately the behaviours (exemplified by making informed choices) were most important. This represents an idealised approach to RI. Three different approaches have been identified in the data, this will form part of the analysis.

Epistemic relations

ER are operationalised as having relatively strong (ER++), strong (ER+) and relatively weak (ER-) forms, with ER- being a pre-requisite for stronger forms of ER. Table 1 outlines the range and dimensions that were observed in the data. In these examples, ER hold the most value for the researcher and her context, even if they are presented as relatively or comparably weaker.

The strongest presentation of ER is '*knowledge as concept*', this represents possessing or understanding or owning disciplinary knowledge and this knowledge enables researchers to engage as actors within the discipline. This is conceptualized as key to legitimating a researcher in the disciplinary community, knowing the specialised knowledge is what counts and is a key marker of disciplinary membership.

In relation to RI '*knowledge as concept*' is representative of the '*compliance approach*' where knowing the content of codes and rules is internalised as strong ER. This differs from the social dimension described as '*knower as compliant*' in that it relates to an approach to RI which is based on processes, actions and obtaining permission (see figure 5, pg. 34). While in the '*knower as compliant*' dimension one recognises and performs expected disciplinary behaviours without having yet integrated them into internal discourses.

Next is '*knowledge as practice*', this represents an opportunity to demonstrate or apply disciplinary knowledge to a particular context. This comes in the form of communicating knowledge through publication, practice, or engagement with stakeholders. While the dimension is still relatively strong, it is dependent on the choices of actors as to how the knowledge concepts are leveraged and practised, therefore it is one step away from '*knowledge as concept*' where the ER are relatively strong.

In RI terms '*knowledge as practice*' is presented as a disciplinary actor using RI knowledge and leveraging it as relevant to the discipline, a demonstration of both disciplinary and RI knowledge.

The final dimension on the ER spectrum is '*knowledge as reliable*', and represents the weakest, relatively, manifestation of ER in this dimension. This is not to say that preferences for knowledge are not apparent, merely that they are comparably weaker than previous dimensions. Indeed one would need first to demonstrate this dimension, represented as ER-, in order to progress into the relatively strong dimensions (ER+ and ER++), it is a gateway to the stronger forms of ER. Disciplinary knowledge is required to meet certain standards to be accepted by the discipline as valid and therefore worthy of integration into the disciplinary canon and requiring action, in some instances. In many ways this dimension is the one on the ER spectrum that is most closely associated with RI values and the practice of RE as they are a minimum requirement for the production of reliable knowledge.

Social relations

SR are operationalised as having relatively strong (SR++), strong (SR+) and relatively weak (SR-) forms. Table 1 outlines the range and dimensions of SR that were observed in the data. In these examples, SR hold the most value for the disciplinary context, even if they are presented as relatively weaker.

The strongest presentation of SR is titled '*knower as inherent attributes*', this represents a strong connection with disciplinary behaviours, attributes, or dispositions. This is conceptualised as well-integrated practices and behaviours that 'come naturally' to actors as they are expressed as character traits, either conditioned by the discipline or related to the participant's own sense of identity.

In the RI context '*knower as inherent attributes*' is imagined as an internal moral compass or drive towards RRP which help inform decision-making.

Next is '*knower as awareness*', this is conceptualised as actors having an awareness of the behaviours or dispositions expected of them by their disciplines and actively engaging with those expectations. It is also a dimension which gives disciplinary actors a sense of power or choice in how they behave or the dispositions that they present.

In RI terms it is akin to making the right choices in a range of spaces from the conceptualisation of a project through to publication, guided by disciplinary and RI values, norms, and practices, because it is regarded as the right choice, and therefore demonstrates awareness of expectations related to attributes and dispositions.

The final dimension on the SR spectrum is, relatively, the weakest display of SR, it is a gateway to the stronger forms of SR and is, if you will, a minimum requirement. This is titled '*knower as compliant*' and relates to actively performing the expected disciplinary and ethical behaviours in order to advance the disciplinary project. This dimension displays the weakest SR, relatively, as it speaks to recognising disciplinary expectations around attributes and dispositions, but in a way that is not yet incorporated into individual internal discourses and ways of being (as per the '*knower as inherent attributes*' dimension). It could be described as a 'fake it till you make it' approach, outwardly displaying all the correct behaviours before refining awareness or fully integrating it into one's sense of being.

In RI terms this is the actual 'behaviour' in the data (as expressed in participant interviews), rather than what lies behind determining a particular course of action based on an internal moral compass.

Table 1: Translation device

Specialisation relations	What matters (discipline and research integrity)	Exemplars from interviews
Epistemic relations	Knowledge as concept (ER++)	"Because it is about knowing what is best practice (sic). What the best approach is." (Isla) "... you have to have some basic knowledge you have to have it because otherwise you know what? You can't do anything." (Coral) "... your collaborations really depend on sort of the disciplinary knowledge a project needs from you." (Brook)
		RI evidence "...that we teach codes and rules principle-based, rule-based codes was very much certainly under the Health Sciences environment, was the way ethics was done." (ORI Director)
	Knowledge as practice (ER+)	"You can't be a successful academic with no manuscripts. Hence, it's the river of manuscripts, because that leads to everything else. If that dries up, bye-bye success; publish or perish, right?" (Coral) "The degree grooms us to be that [legitimate knowledge authorities]. And the way the degree is taught. And even in practice, you know. We are the ones to come with the solution, so we are the ones with the knowledge and the expectation is that because you have the knowledge, therefore you have the authority to tell us what to do." (Lerato) "So, it's also about translation. So, we have to do a lot of ... not big speak, if you know what I mean. It's about talking to people, like I was in a meeting with police officers, and I could use a lot of technical words, or I could just say to them, basically your teeth can tell us where you were born." (Brook)
		RI evidence "It's important to be able to work with the statistician who understands research integrity and who can deliver a training course on the things that you shouldn't do when you're doing a statistical analysis of whatever kind of research, whether it be in social sciences or whether it be other data..." (ORI Director)
	Knowledge as reliable (ER-)	"... being able to present that data in a way that's trustworthy and reliable to be able to convince those that are not necessarily in our discipline but are providing care for patients who may need palliative care." (Isla) "... because it's a knowledge profession and it's taught in a way where we, where it's emphasized that you know the numbers and the calcs (sic) are important because if you get something wrong it has consequences." (Lerato) "It's sort of putting myself in their shoes at that time and in that context. And try to reflect on it from that perspective. But at the same time, listening to the bones. But also taking some facts from these different areas and try to remove some of the bias to see people in their own right." (Brook)
		RI evidence "... the office was obviously set-up originally to help meet compliance so; and to support and service the Senate Ethics Committees, to help meet compliance requirements, particularly in the Faculty of Health Sciences, with all the various permits that are required. Which is now delivered, not so much the Department of Health... And then I think also the South African Veterinary Council." (ORI Director) "You can't. There is no space to disagree. Yes, all the all the approval and regulatory work that needs to be done is a lot and no, nobody likes doing it, but you know it's not a negotiable. You have to do it, you deal with people, you deal with their ailments, you deal with their personal information that's usually sensitive. So yeah, it's not. There is no room to disagree." (Coral)

Specialisation relations	What matters (discipline and research integrity)	Exemplars from interviews
Social relations	Knower as inherent attributes (SR++)	"... for the fact of not being a German. So not starting out as a person with kind of inherent knowledge about the subject and how it is. Whereas I feel like some of my German colleagues just embody that just by being, they are German." (Jean) "It's actually a big burden, to be honest. But it's a good burden because we know research can harm also. ... It's about respecting people. It's about integrity. Just in our normal lives. So of course, it needs to filter through into the academic world and into research that we conduct and then write papers about." (Ashley) "You're equipping students to be researchers, to be, to have research integrity, to be ethical. All those things have to be built in." (Joyce)
		RI evidence "Whereas the virtue approach is about getting the idea across that motivation and various character traits of what makes it a researcher, a good researcher, not just a successful researcher. And that you have a choice in that and that it comes down to an internal compass moral compass." (ORI Director)
	Knower as awareness (SR+)	"I think people think just because you have integrity, you won't make those mistakes but, there's some grey areas where unknowingly you could be doing things without realizing that they're actually wrong." (Lerato) "... it's been a, learning growing space and how to engage interdisciplinarity and how to collaborate effectively ... so we're always engaging with other disciplines in terms of how to move forward with any research, how to conduct the research and actual the actual data collection." (Isla) "I brought in engineers, not because, in a way they say the same thing as I've said, but because it's coming from an engineer. It hits home in a different way, so you know this (sic) complementary perspectives, because the end result is the changing of the sense of identity of the students." (Joyce)
		RI evidence "The idea that it actually comes down to my choices, and I do have power to make the right choices for no other reason other than it is the right thing to do." (ORI Director) "For me, there's much more to it, it's purposefully thinking through and working out exactly how you're going to follow the principles in every part of the research that you do." (Ashley) "... a lot of the things that are questionable research practices come down to their individual choices and that they could have a role to play actually in influencing up, that they may well have people that they work with, supervisors, heads of department or whatever, that are quite entrenched and their way of doing things." (ORI Director)
	Knower as compliant (SR-)	"... I think it's actively working towards, and I think you can develop dodgy research practices by just not thinking things through beforehand." (Jean) "... I could justify to the people who I studied or their descendants that I had the correct permissions in place." (Brook) "...you will do your research properly so that there's (sic) no questions so that it can get published." (Ashley)
		RI evidence "...it's people that have made choices that were shortcut choices rather than the actual responsibility choice." (ORI Director)

Research integrity

Using the translation device described above, it is possible to analyse the specialisation code of RI to further understand the different approaches to RI. RI as a field of study is dynamic and growing, it is responsive to what its actors perceive to be gaps that need to be filled to support RRP. It is a product of its time, and this snapshot is true of the field of study.

RI as a field of study has its origins in the biomedical field, coming out of an environment which required regulation in order to address challenges to the integrity of research. This is visible in the ORI director's description of UCT's ORI origins, "... *set-up originally to help meet compliance so; and to support and service the Senate Ethics Committees, to help meet compliance requirements, particularly in the Faculty of Health Sciences...*". This description encompasses the first approach to RI, one which classified as a '*compliance approach*'. In this approach actors are aware of the regulatory requirements they need to meet and seek to meet those requirements. There is little engagement with the subject matter beyond seeking out gatekeeper permissions and regulatory approvals. This approach is paired with strong ER as you need to have content knowledge related to obtaining appropriate permissions. It is also visible in the idea of code-based ethics where teaching about rules and codes has been the dominant approach.

It is possible to argue, however that there have been shifts in the field and that there is increasing focus on behaviours and characteristics of actors (both in the field and in researcher identities). This means that there is now an increased focus on a '*responsible approach*' and this approach is closely associated with strong SR. In this approach, responsibility becomes a habit and is incorporated into a researcher's identity "*and the idea that if you made those kinds of good choices all the time that it would become habitual*" (ORI director).

The final approach is a blending of the compliance and responsible approaches. This advances the concept of the ideal researcher, one whose knowledge and research practice is legitimated by both strong ER and SR, who knows about rules and regulations and is in the habit of making responsible practices part of their research conduct. This approach is called the '*diligent approach*' and is associated with an elite specialisation code, "*recognizing your power and your choice, your ability to make choices, but also being aware of what the codes and the requirements are.*" The ORI director argued that RI training needs to include both content knowledge and interventions that enables changes in behaviour. "*I think that that RI training is about trying to get people to be able to make different choices in certain*

circumstances, and that probably makes it even a level up from just getting content knowledge." These approaches and dimensions are visualised in figure 5.

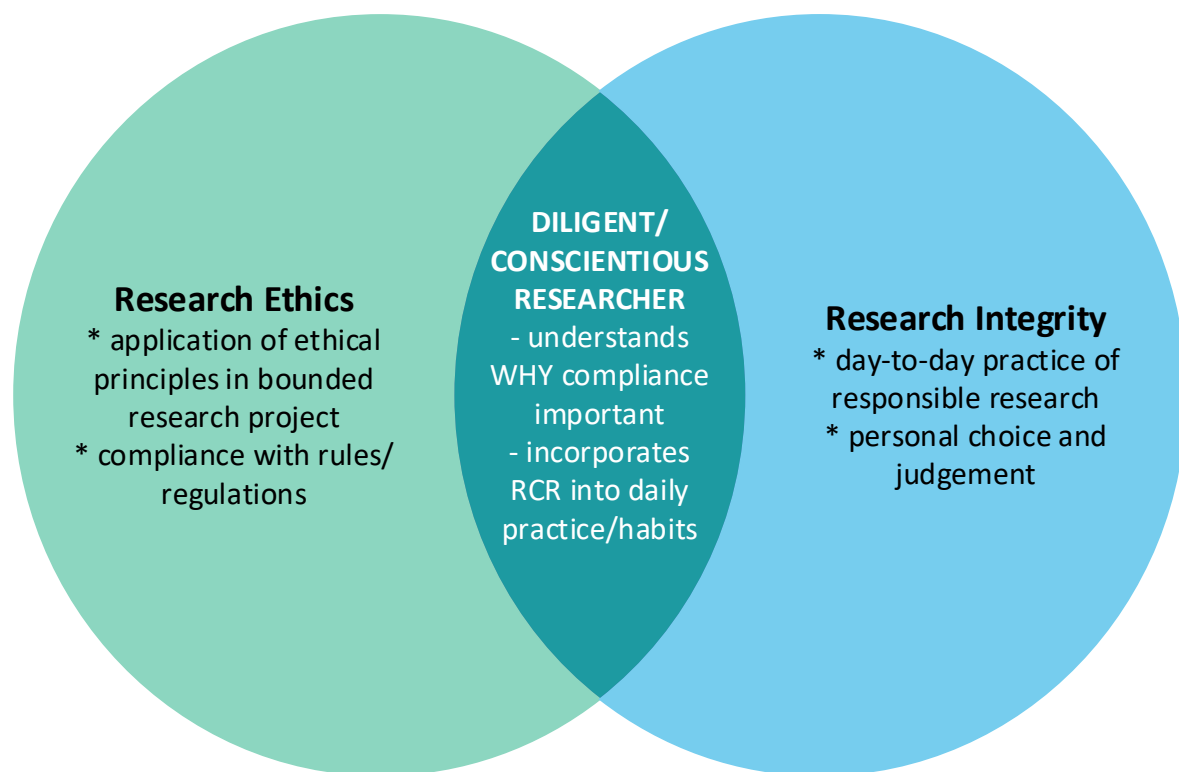


Figure 5: Approaches to RI

Participant descriptions

Participant descriptions were developed based on the more complete participant synopses described. These were developed after initial thematic analysis of the research artefacts and my own personal reflections on each engagement with the research participants. Developing these synopses and descriptions were a means for me to engage with the full range of participant data and to incorporate emerging ideas using the theoretical and conceptual frameworks.

Ashley

Public governance and research methodologies

Ashley's disciplinary space is characterised by a knowledge specialisation code. She has deep knowledge and experience of and practice with generic knowledge (research methodologies) that can be applied in the disciplinary space. This generic space is characterised by strong ER. This compatibility means that while she does experience discomfort in some elements of her research practice, there are sufficient

points of contact to allow for transition between the spaces and the recognition of her important epistemic contributions to the development of future disciplinary actors.

The values which underpin her researcher identity (openness, open-mindedness, curiosity, problem-solving, providing solutions, collaboration, flexibility, integrity and openness to data 'stories', respecting people) are compatible with RI. Ashley conveyed that integration of RI into her preferred discipline (research methodology) was purposeful and crucial to developing postgraduate students. She has explicitly integrated RI into her engagement with students and sees these fields as 'doing' spaces. In considering RI, Ashley reverted to her disciplinary (Public Governance) position of expressing RI knowledge as content to be learned, rather than behaviours or dispositions to be developed. This suggests that despite her own purposeful and thoughtful engagement with RI and attempts to integrate it, there are some habits, conditioned by disciplinary orientation and personal experience, that refer to the disciplinary origins, in valuing ER over SR.

Brook

Biological Anthropology and Anatomy

Brook's discipline allows for a wide range of subject-matter expertise, this is borne out in the range of collaborations where she engages in different projects with different lenses. The ER of the discipline is shown to hold the most value. In engaging with those outside of the discipline (like the police), Brook suggested that there was an emphasis on SR. However, the emphasis was on communicating knowledge effectively, in other words, using the knowledge of the discipline to adjust communication practices in order to convey critical knowledge and information.

Brook highlighted honesty, contemplation, exploration, curiosity, high-level problem solving, accuracy and focus on data quality as values which underpin her research. Demonstrated by her description of her island where others would come to collaborate, we can see that social interaction is a means for Brook to produce knowledge. The values present on her island are used as a means to deepen her ability to produce meaningful research and knowledge. Brook has explicitly integrated RI into her own space, going beyond her understanding of disciplinary expectations. She has actively integrated RI values, which she sees as complementary but notes that not all in the discipline might be inclined towards these practices. As an individual, she represents a researcher who has integrated both RI and understanding of the importance of compliance processes and therefore sees RI as compatible with her discipline and an explicit practice.

Coral

Medical Virology

Coral operates in a discipline that values ER and views its contribution to the academy as specifically producing knowledge. Coral spoke of values which are embedded in her practice as a result of her training in the discipline, these were identified as producing robust, high-quality, excellent, state-of-the-art, reliable data. The epistemic project of the discipline is what largely drives progress in the space.

It was clear from the evidence that she saw RI as forming part of both her personal and researcher identities. RRs form part of disciplinary training and therefore enable and support the epistemic project. While the discipline seems to lean towards a selective compliance-based approach to RI, Coral saw it as a significant part of her identity and how she chooses to engage with other researchers. This suggests that Coral's engagement with RI is more explicit than that of her discipline, but there were instances where she did lean more to the compliance approach. Honesty and transparency were identified as the most important values, she discussed ethics with a biomedical lens. For Coral, being honest (with her sub-themes of objectivity and fairness) and conducting research in a transparent (with her sub-themes of producing robust, reliable, reproducible data) way were behaviours that should support the research. She is located in a discipline which favours epistemic relations, where approaches to RI are framed through a compliance lens and are implicit practices. Coral, herself, may be more explicit and purposeful due to her own personal traits, but this shaped by the epistemic preferences of the discipline.

Isla

Palliative Care

Isla is based in a region, she understands palliative care not to be its own discipline but a collaborative project that requires engagement with other disciplines in order to produce knowledge. Isla asserts that palliative care has not yet fully realised the label of a discipline, citing lack of recognition with the HPCSA as a specialisation as evidence for this assertion. For the purposes of this research, I am referring to it as a discipline. It may be the case that it is in the process of becoming a fully-fledged discipline on its own terms. Davies and Devlin note that "over time new disciplines naturally gain their independence from their disciplinary homes, especially once a defined methodology is employed to determine the subject matter of each" (2010, p. 7). Or it may be the case that it continues to be practiced by people from a range of other biomedical science disciplines, which do not give it the opportunity to define a methodology appropriate to the space. Isla is in a space where knowledge holds the most power, but it is possible to see that social relations too hold some sway inasmuch as they contribute to knowledge

production and therefore strengthen the epistemic project. This suggests that she is engaged in an elite specialisation code where both ER and SR are valued.

The values that Isla highlights as underpinning her researcher identity (reliability, honesty, good stewardship of research, trustworthiness, quality of data) are consistent with RI values. The balance of SR and ER is one which Isla confronts on a regular basis, and the people-centred approach, where SR are key, is wholly underpinned by the ER of the discipline. Isla falls back on knowledge as a safe space from which to take engagements further. In considering RI, Isla admitted that she is not as deeply engaged as she would like to be. However, the values which she highlighted as part of her researcher identity are complementary to RI values. There is no conscious attempt to contest or reject RI, but those values are more implicitly integrated than purposefully considered. Isla is conscious of the importance of these implicit values, indicating that they formed an integral part of her researcher identity.

Jean

German Studies

Jean indicated that disciplinary actors saw personal attributes holding the most value, referring the *"being German"* or *"mother-tongue speakers"* on several occasions. This suggests that the discipline positions itself as a knower code, where SR are seen as holding the most power. It was apparent that while SR were critical as a legitimating tool it was also critical that they were underpinned by epistemic competence, that is, having and using specialised knowledge (which came in the form of being able to competently speak the language and engage with others). This leads to the conclusion that while SR is strong in the discipline, ER hold at least an equal position suggesting an elite specialisation code.

Jean readily spoke of producing responsible research which was carefully thought out and planned. This careful planning was seen as a means to confront ethical challenges. She suggested that RI was an implicit practice and saw no need for contest or rejection. Jean spoke of research needing to have a purpose, being transformative, fairness, compassion, organisation, accessibility, transparency, and critical engagement. These values are well aligned with RI values, which may explain why Jean felt their practice was implicit. The discipline, in valuing ER and SR creates a space that enables acceptance of RI, but the extent of integration is less clear cut.

Joyce

Education and Development in the Faculty of Engineering and the Built Environment

Joyce works in a space which values ER as the principal legitimating attribute, while she leans more to behaviours and attributes as factors which are valued, therefore suggesting a knower code. There are tensions in her space of practice, which is governed by an ER code and values fundamentally different attributes to her strong SR preference. Joyce is consciously trying to disrupt the strong ER of the engineering space by reframing her own teaching in a behavioural approach. She aims to disrupt the "compliance" approach by leveraging engineering's ER preferences as a means to socialise and produce students who are not only strong epistemically, but who also value behaviours and dispositions. She does this by incorporating discussions about 'how', 'why', 'how come' and 'what about' into the teaching space which is otherwise focussed on 'what' and 'outcome'.

RI is strongly incorporated into Joyce's professional and personal identities, actively and explicitly. While RI is explicitly practiced and integrated into her identity, the disciplinary space in which she operates is one where RI is largely viewed through a compliance lens. Joyce spoke of the values of collaboration, criticality (or critical enquiry), social justice orientation, inclusivity, reflection, and open communication being important to her professionally. These values lean more towards social dispositions. But she also spoke of appropriate research methodologies and technical tools being important to the research process, displaying the underlying ER+ nature of the space in which she is embedded. She spoke of the responsibility of equipping students to become researchers in a way that would enable RI, leaning to a knower code.

Lerato

Civil Engineering

Lerato is based in a strong knowledge code, where ER define engagement. However, Lerato acknowledges that often the epistemic preferences of the discipline are trumped by social practices in other spaces (e.g., related to delivering water services to communities). She noted the importance of community engagement in developing solutions to challenges. Community engagement was framed as a means to tap into social knowledge and practice to enhance the epistemic project and outcomes of the discipline. While Lerato spoke many times about wanting to bring social elements into her practice and that of the discipline, it was largely in service of growing ER, rather than SR.

Lerato identified curiosity, openness to co-creation and co-learning and 'awareness of her overbearing nature' as values which underpin her researcher identity. Implicitly, she spoke about concerns related to

inequity and lack of inclusivity when it came to water infrastructure, suggesting that equity and inclusivity are also important SR values. The discipline's approach to RI is in line with a compliance approach. The disciplinary engagement with RI is surface-level, by Lerato's own admission. She described RI in terms of behaviours, suggesting a recognition that RI is more inclined to SR. This results in some tension, suggesting that RI involves *avoiding* certain actions (e.g., corruption in infrastructure spaces), which is informed by knowing what the right things to do is, or which rules you should follow. She argued against a compliance approach but could not describe what an RCR approach might look like.

Research integrity

RI is characterised by contrasting and interdependent approaches (figure 5, pg. 34). The first can be described as a 'compliance' approach. In this approach researchers complete policy or regulatory requirements as a means to obtain permission to conduct their research. This can take the form of submitting an application to an ethics committee, receiving authorisation to perform procedures on animals or other due diligence requirements. Horn describes this as a "series of unpleasant hoops and obstacles that must be navigated to get to the research they [are] hoping to conduct" (2022, p. 69). This approach is aligned with a knowledge code, where it is important to know what permissions you need, and how to obtain those permissions. The ER take precedence.

The second approach is one where RCR and RRP are integrated into a researcher's way of being and doing. Horn describes this approach as hinging on the "attitudes, motivations and influencing forces of every researcher, whether they are working alone, in small teams, or ... large collaborations" (2022, p. 71). This approach is aligned with a knower code, it considers motivations, behaviours, and decision-making. The dispositions of the knower are important therefore the SR take precedence.

The third approach is a combination of the others. It is characterised by a preponderance towards both ER and SR. Here an actor would understand the important role of the compliance processes *and* have an internal drive to practice research responsibly. The ORI director noted that "*it's no good knowing all about conflicts of interest, if you're actually not going to change the way you've used certain practices and just carry on anyway*". This idealised, third approach, is captured on the specialisation plane as an elite code, which brings together ER and SR.

Findings

Epistemic relations

Knowledge as concept (ER++)

This dimension represents, the strongest set of epistemic relations. It underlines the importance of possessing disciplinary knowledge as an enabling tool for actors to engage in their space. In some ways, it can be seen as the foundation of one's disciplinary researcher identity, one must possess a particular set of knowledge in order to be a legitimate disciplinary researcher. Most participants expressed that they viewed '*knowledge as concept*' as being valued by the discipline.

Obtaining and possessing disciplinary knowledge is seen as the foundation for engagement, "*you have to base it [research] on all theories and ... how we do things and what has worked before. So, we start there...*" and build on a "*... core set of knowledge*" or "*some basic knowledge*". This foundation enables individual progress within the discipline for without the knowledge "*... you can't do anything. You can't do any lab work. You can't analyse any data without that background knowledge. So, you have to have that.*" Possessing disciplinary knowledge also enables collaborations which "*depend on ... the disciplinary knowledge a project needs from you*", and therefore enables and enhances the reputation of a researcher as a legitimate knower.

Underlining the importance of possessing a conceptual foundation of disciplinary knowledge is the possibility that one may have a broad but shallow range of knowledge and therefore not have the required disciplinary depth to engage as a legitimated researcher in the space. In one case this was linked to a disjoint in a researcher's interests and the requirements of their teaching appointment "*... my appointment is linked to something that's outside of my research area of interest. So, what's difficult for me about my future is that I actually don't know how to balance my research interests and what I teach. Because what I'm expected to teach is different from my research direction*". The focus on content and conceptual knowledge in the disciplinary space is viewed by the participants as the foundation for legitimacy and eventual progression. The importance of conceptual depth (internal discomfort) is visible in this researcher's assertion "*you need to build your depth in what you know before you get lost in the all huggy-feely, doing all interesting things. But ... you don't have depth in in your discipline*".

The evidence shows that the strongest ER, described as '*knowledge as concept*' presents a platform for researchers to use as they engage in projects with varying levels of strengthening and weakening ER. This foundational knowledge enables engagement within their disciplines.

Research integrity

Evidence from this data set linking RI directly to the '*knowledge as concept*' dimension, is scant. There was advocacy for greater integration of the RI content across the board at the institution, "*it needs to almost be incorporated in every single degree actually. I believe it's so important that how can it not be? So, it should be a component of a course like I'm doing a research design and methodology course and then these the things should be incorporated in that.*" This advocacy is framed in a '*knowledge as concept*' dimension, where the relative strength of the epistemic relations holds the most value, but stems from the researcher's deep personal, social engagement with the field of study and as yet has not been realised in the institutional context. This should therefore be viewed as aspirational. For this researcher there is a layer of social relations driving her statement, but the important message that she conveys relates to building strong epistemic relations related to RI in students, rather than socialising them into a particular set of behaviours and attitudes.

The strongest evidence for RI having an element of '*knowledge as concept*' was offered by the ORI director, who noted "*...that we teach codes and rules principle-based, rule-based codes was very much certainly under the Health Sciences environment, was the way ethics was done.*" It is worth noting that this statement is framed in a 'past practice' manner, suggesting that RI at UCT is attempting to move beyond this dimension. It is also worth noting that this comment is framed for a specific collection of disciplines (Health Sciences) and targeted at the more narrow field of RE rather than RI.

Overall, '*knowledge as concept*' can be viewed as a foundation or platform that enables researchers to engage in their disciplines as specialists and to be seen as possessing the appropriate knowledge to be viewed as an actor in the disciplinary community. Evidence related to RI in this dimension is less clear, although there is a suggestion that knowledge about RI is (a) necessary and (b) needs to move beyond its earlier conceptions of 'just' possessing a certain set of knowledge.

Knowledge as practice (ER+)

This dimension represents an opportunity for researchers to display their disciplinary knowledge, it is one step removed from possessing the knowledge ('what'), to being able to demonstrate some level of competent communication, engagement with or application ('how to') of the knowledge. Many

participants discussed some level of '*knowledge as practice*' as being part of disciplinary knowledge relations. As the dimension that sits between the relatively strongest (ER++) and weakest (ER-) epistemic relations, it appears to also function as an intermediate dimension. It is borne out in a range of collaborations that one researcher was engaged in:

"I'm working with some geneticists. I work with ethicists. I'm also working in the forensic science space. I work in Bioarchaeology and with archaeologists and that space, and then I also work in human variation and understanding anatomy, but then also a component of what I do is medical anthropology, which is similar to public health. But more centred on ... why [issues] exist."

This demonstrates competence in communicating or using the knowledge one has through a range of collaborations, highlighting that the researcher leverages different ways of practicing knowledge in different contexts. This is supported by the researcher's assertion that people in her discipline "*bring different perspective[s] to many kinds of biological research*".

This dimension can be the result of training that the discipline provides, "*it's sort of ... drilled into us in our training ... double check everything, be pedantic ... make sure that what you're producing is correct, don't take shortcuts, do things properly.*" The influence of disciplinary training was also noted as:

"... the degree grooms us to be that [legitimate knowledge authorities]. And the way the degree is taught. And even in practice, ... We are the ones to come with the solution, so we are the ones with the knowledge and the expectation is that because you have the knowledge, therefore you have the authority to tell us what to do."

Practicing disciplinary knowledge is done on a solid foundation of conceptual knowledge and is seen as separate to possessing it, it enables a researcher to be viewed as a competent and legitimate authority, producing knowledge that can potentially be included in the official disciplinary record: "*... in my research, ... I guess what every academic wants. I want great manuscripts. I want to get well known. I want to produce high quality, reliable, excellent, state of the art data.*" This suggests that possessing knowledge, as '*knowledge as concept*' is different to practicing the discipline, further supporting Maton's (2014, p. 24) argument that using the correct disciplinary methods and procedures is a second form of legitimization in a knowledge structure.

This dimension is also apparent when engaging extra-disciplinary stakeholders: considering issues such as "*how to integrate and implement palliative care in our context*" or being able to "*translate*" information to minimise the use of "*technical words*" or "*big speak*" so that those outside of the discipline are able to engage appropriately with the necessary information, "*it's about talking to people*". Further indications that this dimension is engaged can be found in frequent references to "*gathering evidence*" and

"knowledge and practice", suggesting that practicing one's discipline correctly is a second form of legitimation.

The translation device designed for this study coded this ER as sitting between the relatively strongest (ER++) and relatively weakest (ER-) on the spectrum. This suggests that researchers make use of the *'knowledge as content'* dimension as a foundation to enable practice. This legitimate *practice* was understood by participants to be important for the enactment of one's disciplinary researcher authority and identity.

Research integrity

Evidence for RI in this dimension can be viewed through a mediation lens, that is, recognising the need for RI practitioners to collaborate with a 'disciplinary intermediary' in order to leverage disciplinary discourses and include RI values and practices in those discourses. The ORI director argues that:

"It's important to be able to work with the statistician who understands research integrity and who can deliver a training course on the things that you shouldn't do when you're doing a statistical analysis of whatever kind of research, whether it be in social sciences or whether it be other data..."

This suggests that RI as a field of study needs to work closely with disciplinary actors in order to realise RI practice within a disciplinary space. The ORI director suggests that it is the disciplinary researcher who is empowered to simultaneously practice their discipline and RI.

Additional evidence of this mediation is visible when those working in generic spaces (such as those described by Bernstein) invite disciplinary actors into the generic space to further enhance not only their own pedagogic practice but also the practices of the disciplinary actors and the practice of the trainees or students for example: *"work[ing] with engineering educators on ethics education"* and *"aligning students' work experience with industry in a creative way which enhances the ethics of both the student and the company."*

It is also possible in some disciplinary spaces that the practice of the discipline (in this case medical virology), directly enabled and encouraged the practice of RI:

"I mean, they are pretty much the same thing [research ethics codes and the Singapore Statement]. [W]e might have more ... detail ... administrative frameworks in which to carry it out, but the underlying values and everything are ... identical. There's nothing missing on there that we do and there's nothing on there that we don't do."

Overall, *'knowledge as practice'* is a means for researchers to display their 'how to' knowledge and to demonstrate their competence in the field. Evidence related to RI in this dimension can also be viewed as a mediating step, one removed from *'knowledge as concept'*. In this way, the argument is that RI needs to become an embedded practice, rather than a set of rules or abstract concepts. This supports the assertion from the ORI director that disciplinary actors need to be enabled to practice RI in the context of their disciplines.

Knowledge as reliable (ER-)

This is the final dimension on the ER spectrum, *'knowledge as reliable'* and represents the weakest set of *'knowledge as practice'* ER. I have described the *'knowledge as concept'* dimension as a platform that is a necessary prerequisite to be viewed as a legitimate disciplinary actor. In the translation device designed for this study this dimension can be viewed as a minimum requirement for legitimate research practice and a sub-set of *'knowledge as practice'*. To gain legitimacy a researcher would need to demonstrate the use and production of *'knowledge as reliable'*. From a knowledge code perspective, this represents the minimum standards for accepting knowledge as valid and worthy of inclusion in the disciplinary corpus.

This dimension is understood by researchers as *"...the idea that ... if the method is good and is scientifically well applied, it's a good, safe place as a researcher to anchor oneself"* in reference to the quality and reliability of disciplinary knowledge production, needing to produce knowledge that meets certain minimum criteria for inclusion in disciplinary canon:

"you review the data to see that, ... everything was fine. It worked, your controls worked. Your data looks good. ... you have to make sure that what you're getting out is robust and reliable."

One researcher suggested that this dimension could be enhanced by an addition to her current practice:

"what I might add ... is if we could instead of reviewing our own data ... [it] would be nice if we could swap data. I'll check your data if you check mine... That is done for larger clinical trials, but not smaller studies. A second pair of eyes is always good. In case they pick up something that you've missed, because these data sets that we deal with are quite large."

The reliability of knowledge in the knowledge codes is a minimum requirement for legitimation, this is most clearly demonstrated when one researcher argued that:

"being able to present data in a way that's trustworthy and reliable and able to convince those that are not necessarily in our discipline but are providing care for patients who

may need palliative care. ... We need good data to be able to do that and we need to present it well in different platforms."

The requirement for knowledge to be produced in a way which ensures reliability and validity enables disciplinary actors to assert the authority and legitimacy of their knowledge claims both within their disciplines and also in contexts where non-specialists may also be involved. In this way, it is possible to support the argument that this dimension is a gateway to stronger epistemic relations on the spectrum presented.

This dimension, additionally, enables researchers working in fields such as anthropology, where strong social relations to knowledge are also present, to critically engage with the inherited disciplinary canon:

*"we rely on ... literature that was mainly written by white people, white men, in the past. And one of the things that I really struggle with is trying to take the information that's factual from those documents **because there is some fact in there**, but leave out some of the unconscious bias or conscious bias that comes in. And then try to read from the dead themselves, the stories they want to tell and try to be a bridge for all of these different things."*

In the above we see varying degrees of strong **epistemic** relations and social relations represented, thus supporting the argument that this researcher is located in an elite knowledge code. In this elite knowledge code there is acknowledgement that the strong social relations implicated in the production of knowledge in the past was done so under the peculiar social conditions of a settler society. Thus the 'facts', representing strong ERs, need to be extracted from the bias of their social contexts if they are to still hold legitimacy in contemporary research and are, to be considered to some extent, reliable.

Research Integrity

This dimension is closely aligned with RI practices and values, namely the need for knowledge to be viewed by disciplines as meeting minimum criteria for reliability validity and thus inclusion in the canons of official knowledge production. This is where we find some of the more direct links with RI as a field of study.

In this dimension RI becomes a toolkit for ensuring the production of valid knowledge that could reasonably be included as legitimate disciplinary knowledge.

"So, honesty, integrity, transparency, good research practices, I mean it's in-built. ... there are things that you do not do ... to carry out your research, there are all these criteria you have to meet you have to do ... obviously ethical approval, all of that. ... It's a framework that's there and you don't mess with it."

Data from researchers working in *knower codes* (outside of the biomedical sciences) suggests there is a less urgent and impactful need for correction of disciplinary knowledge. Comments about the immediacy of the consequences of questionable literary research by the researcher in German Studies are worth foregrounding, *"it's not if you say something about them [the texts], it ends up being wrong. Ohh well, you publish a new paper, and you say ... you know what? I found out some new things and actually maybe that was wrong. ... It's not that immediacy of having real world consequence."* This position is supported by Horn, who notes that:

"Every research field is different and has different requirements. A philosopher who never conducts empirical research will have fewer or different ethical and RI challenges to the historian who delves into sensitive archives, ... or the physician who is enrolling his own patients in clinical trials." (2022, pp. 69-70)

For a researcher who works in a fundamentally different knowledge code to many of the other participants, assessment of validity was important, but with the caveat that it's validity could be questioned in the longer term, and disciplinary knowledge could be updated or corrected. This is because legitimation here is based on strong SRs rather than strong ERs and is borne out of a disciplinary environment that values the behaviours and dispositions of the actors. Regardless, the intention behind including valid knowledge through this gateway, relatively weaker, epistemology stands.

Through these examples we see that the reliability, validity, or integrity of the knowledge being produced is assessed by the discipline and if found to meet acceptable criteria, it is deemed appropriate to include as disciplinary knowledge. The knowledge practices that the researchers presented as valued in this dimension, specifically related to the validity of knowledge production and practice, show a that this dimension is closely aligned with the values and practices of RI as a field of study. It is therefore possible to argue that *'knowledge as reliable'*, as a sub-set of *'knowledge as practice'*, is a means to legitimate RI in a researcher's research practice.

Social relations

Knower as inherent attributes (SR++)

This is, relatively, the strongest social relation (SR++) representing the internalisation of widely agreed upon disciplinary behaviours and dispositions. Such behaviours and practices appear to 'come naturally'

to actors as they are either conditioned by the disciplinary community and/or become inherent in the researcher's sense of identity.

One presentation of this dimension is visible in this example of inherent national identity, *"though I have a qualification in German, I am South African and that can be ... a little difficult in this field because a lot of people are German mother-tongue speakers teaching German, so they have ... the embodiment of what it means to be German."* This legitimating attribute is naturalised beyond simply integrating a certain set of acceptable behaviours: *"some of my German colleagues embody that just by being, they are German. Therefore, ... surely, they know everything ... by, ... [the] inherent value of being a German person."* These legitimating characteristics extend to who you are as a person, so being German, or not. This state of being, or inherent attribute, is a critical legitimating factor in some fields with strong knower codes, although, this is certainly not case with the *knowledge codes*.

Integration of *'knower as inherent attributes'* was not a common presentation in the data, but is visible in an assertion from one researcher, located in an *elite code*, that her own research practice, based on a sense of deep personal responsibility and disciplinary engagement was:

"actually a big burden, to be honest. But it's a good burden because we know research can harm also. So, I think in today's day and age ... it's about respecting people. It's about integrity. Just in our normal lives. So of course, it needs to filter through into the academic world and into research that we conduct and then write papers about."

There was additional suggestion from one researcher that a disciplinary way of being should *"be built in"* because *"you're equipping students to be researchers"*.

Research integrity

RI in this dimension presents as an internal moral compass or drive towards RRP. In this context, RI values and practices help to inform disciplinary decision-making. The strongest evidence here comes from the ORI director who noted that it *"is about getting the idea across that motivation and various character traits of what makes it a researcher, a good researcher, not just a successful researcher. And that you have a choice in that and that it comes down to an internal compass moral compass."*

One participant expressed sentiments that are aligned with an SR++ dimension such as being *"quite pedantic about the ethics and the permission"*. For this researcher, her internal moral compass, she suggested, exceeded that of the expectations of her discipline,

"technically I think my discipline is in such a place that [it] wouldn't be considered wrong to take those shortcuts, but for me. It wouldn't be right to do it, ... it's a principled thing."

... that we can feel comfortable. It's not just about accountability. ... we work with the dead and the dead can't consent, so it is a really complicated space."

This demonstrates a strong internal drive towards awareness of principles and behaviours that can be considered to produce knowledge that is worthy of being added to the disciplinary record. This internal drive was especially apparent when the researcher indicated that *"it's legal, it's completely legal. They're not doing anything illegal. But is it ethical?"* For her generating knowledge and refusing to take legal and ethical shortcuts which are possible in the discipline demonstrate a strong affinity to the *'knower as inherent attributes'* dimension, where her own disposition and behaviours are an important legitimating tool.

Other researchers suggested that *"responsible conduct is a way of being"*, that it is *"a way of thinking, checking yourself, checking in with your colleagues"* and a *"way of doing things rather than just the absence of ... there wasn't anything really that was super dodgy."* This supports the ORI director's comments about being a 'good researcher' not just a 'successful researcher' and also the assertion that this dimension represents internal or inherent attributes.

For the *knower codes* disciplinary space this is realised in behaviours and practices that 'come naturally' either as a result of some sort of disposition or as a result of disciplinary conditioning. In the RI space it manifests as a strong internal moral compass that drives one towards RRP and informs disciplinary-based decision-making.

Knower as awareness (SR+)

In *'knower as awareness'* the researchers are aware of the behaviours and dispositions expected of them by the discipline *and* they choose to actively display them. This dimension empowers the disciplinary actors to actively make choices related to the types of behaviours they engage in or dispositions they present. It is possible that the actors in this space have not necessarily internalised these behaviours and dispositions in a way that might be present in the stronger dimension of *'knowledge as inherent attribute'*, but they are aware of the disciplinary expectations and agree to enact them.

Participants expressed expected behaviours differently, largely as a result of disciplinary differences, some viewed behaviours and dispositions as a reflective process of engaging with data; others as a process of identifying an approach in a given situation and then acting on that approach; others as knowing how and where to engage with their own research participants and others as engaging with disciplinary and data complexity:

Reflective process

"I'm working with some skeletal remains in the Karoo and a lot of the information and historical documents are all written colonial (sic). But the remains are telling this really interesting story of subjugation and pain and suffering, but also cultural revolution and retention of cultural identities and the subjugated world. And no one's really talking about [that], we don't have those perspectives."

"And so that's what I mean by ... immersion and that's also comes in my island, ... these spaces of contemplation is just trying to then bring all of these weird pieces of information together to tell a new story. A transformed story of the past."

Identifying an approach

"it is about knowing what is best practice. What the best approach is. And then having the awareness of how to engage with the person, so that there is a meaningful interaction that is of benefit for the person, whether they be a patient or participant in a research study."

Engaging with research participants

"[In] a clinic and the research assistant would be introduced to a participant in a busy setting and not always in a private setting. ... our approach has always been to minimize what participants need to say in public. So that they're given the information in as general [a] form as possible and should they wish to consider it, then they are taken to a private space. So that that their privacy and confidentiality is not compromised."

Engaging complexity

"the complexity ... trying to make sense of this mass of data so that you're true to what you've collected, what your methods are and what your participants have shared with you ... because our approach is person-centred and not necessarily disease-centred."

One researcher provided a thoughtful contrast to the active decisions presented above: *"I think people think just because you have integrity, you won't make those mistakes but, there's some grey areas where unknowingly you could be doing things without realising that they're actually wrong"*. Here suggesting that it is the duty of the researcher to have a level of awareness regarding disciplinary conduct expectations, in order to behave appropriately.

Lastly, for one researcher, building disciplinary awareness through active engagement with the community of knowers was a path to gaining disciplinary legitimacy:

"... going through my postgraduate degrees, presenting on the research, attending conferences with other people ... and ... seeing what else is out there and how others

approach things and what they're doing. I definitely do feel like I now have a sense of legitimacy in my own right."

This awareness of, and choice to, engage with the expectations of significant others in the disciplinary community demonstrates her understanding of the need to display certain behaviours as a disciplinary actor, but also constructed in a way that enables her to create a meaningful self-identity: "... *what I've done ... is [develop] ... my own identity as an applied linguistics German researcher.*" This researcher's active engagement with the disciplinary community is done predominantly with social relations in mind,

"So, the kind of language that we are teaching them isn't really the same as the language which is out there. ... I like to orientate myself towards those who say, ... we need to just acknowledge that teaching language is pretty artificial. ... and we should also make the students aware that [it] is artificial, that we are in this environment and that the language that they see, and the textbook might not be language as it's out there."

Research integrity

In this dimension RI is conceptualised as making choices guided by both disciplinary values and RI values. This choice is made because, by all appropriate standards, it can be considered the right choice to make. It therefore demonstrates a researcher's agency to make choices. This is not, as per the previous dimension, driven by an internal moral compass, but rather by informed and active decision-making. The ORI director describes this as *"the idea that it actually comes down to my choices, and I do have power to make the right choices for no other reason other than it is the right thing to do."*

Some researchers expressed this dimension through and alignment of values and actions, *"it's how you do what you do. And it needs to be aligned with one's own personal values and a community's values"*, others by expressing the view that current practices have the potential to undermine RI choices,

"the process that people sign up for is the ethics, their ethics application. By making it too easy to pass it or not need it, they can short-change the ethics, the research integrity process..."

and others still by purposeful reflection, *"for me, ... it's purposefully thinking through and working out exactly how you're going to follow the principles in every part of the research that you do."*

Researchers were also acutely aware that their disciplines may have different expectations than other disciplines, suggesting that others may make different choices as a result of the disciplinary context,

"[In my discipline] you can't say, ... I've got an experiment and I'm going to take half of my class and I'm going to give half of the class this treatment and then I'm going to take the other half of the class and give them this different treatment and then I'm going to

see which method was best. Teaching is not like that. And that would be really weirdly unethical."

Additionally, a different researcher reflected that having knowledge of different practices in other disciplines was a means for her to understand and deepen her own social engagement,

"I found that knowing that I was wrong in another discipline thought-provoking. Because I also think it's that kind of component where those gaps ... in different spaces. ... I do think that we can improve practice across the board if we learn from other bases."

Lastly, some suggested that active consideration of RI values and practices in the context of their disciplines enabled responsible decision-making,

"I found writing ethics applications ... help me to think about, how will I interact with my participants? What is the nature of my role as both their lecturer and also researcher? How does this power dynamic work? How am I going to interact with them in a way that feels responsible? So that they don't feel like they're pressured into doing anything that they don't want to do...?"

and placed responsibility on actors to go through the process towards making responsible choices,

"I think they have more responsibility than they sometimes acknowledge, because it's easier not to acknowledge that responsibility because then you don't have to wrestle to the same extent."

Overall, this dimension represents one having awareness of legitimating disciplinary expectations around behaviours and dispositions and actively choosing to engage in those expectations. In some sense it empowers actors to make choices, within the bounds of their discipline's practice, and in some cases to exceed those expectations. In bringing RI into this discussion we have seen that '*knower as awareness*' is akin to making the right choices, guided by a combination of RI and disciplinary expectations. The ORI director sums it up as:

"... a lot of the things that are questionable research practices come down to their individual choices and that they could have a role to play actually in influencing up, that they may well have people that they work with, supervisors, heads of department or whatever, that are quite entrenched and their way of doing things."

Knower as compliant (SR-)

This weaker, relatively, form of SR, '*knower as compliant*' can be colloquially described as a 'fake it till you make it' approach. In this dimension the researcher is actively performing behaviours and dispositions expected by the discipline, without necessarily having the understanding or 'buying into'

these expectations. The principles and behaviours are not yet incorporated into any internal discourse or ways of being but tend to be done for extrinsic and instrumental reasons.

One researcher suggested that it was "... *actively working towards ... and I think you can develop dodgy research practices by just not thinking things through beforehand*", another suggested that it was an important behaviour to demonstrate for external stakeholders, so "*I could justify to the people who I studied or their descendants that that I had the correct permissions in place*" and another suggested that students must "... *do [their] research properly so that there's (sic) no questions so that it can get published*", with the end goal of publication motivating the action, rather than a drive to produce research which was conducted in line with disciplinary expectations.

There was also some evidence that complying with disciplinary expectations, for example that communication takes a specific form, was a stepping-stone towards achieving a greater sense of disciplinary identity, even though for the researcher it provided significant levels of discomfort:

"... through engaging specifically with other colleagues in the discipline. ... it is terrifying, ... my job happens now in German. ... we do meetings, emails, everything in German. When I go to a conference, it is in German. ... you're operating in a foreign language. That's another layer of ... I feel like an imposter. If I make a grammatical mistake here, obviously you are going to be seen as "not quite there yet". Even if my theoretical knowledge is very sound. My performed identity has to be in a foreign language. ... I think overcoming that's been a bigger part than just overcoming, is my research and my understanding of the knowledge of the discipline, and how good of a knower or not I am."

While it is possible to interpret the above as the discipline's preference for '*knower as inherent attributes*', or SR++, it is relevant here that the researcher understands the behavioural expectations of the discipline and is attempting to strengthen social relations by complying with the expectations of the discipline. She expresses discomfort in her performed identity and is using the regulating discourses of the discipline to strengthen her own social relations to the discipline. This compliance happens out of a sense of needing to meet disciplinary behavioural expectations and through constant engagement (or 'faking it') allows growth. It is worth noting that this growth, enabled through social relations also links to the '*knowledge as practice*' dimension. In this case the two work together to help the researcher develop a sense of personal and researcher identity in the context of the discipline.

Research integrity

In this dimension RI is conceptualised in a similar manner, 'fake it till you make it'. It is expressed as behaviours that are not based on internal dispositions but simply a notion, or perhaps instruction, that it is the correct course of action.

For example, in one discipline, a researcher who was deeply engaged in RI suggested that she was creating a '*knower as compliance*' space by creating "*a standard of practice that others have to achieve.*" In this assertion the 'others' may not want to, or know, about RI practices, and this may be perceived to be placing an additional burden on already busy researchers. The researcher indicated that "*I know that people criticise me because of it*". For her, personally, RI presented as '*knower as inherent attribute*', but she argues that her disciplinary space is more inclined towards '*knower as compliant*', simply adhering to compliance processes because they have to, for example, "*in the forensic space, I do think there is a component of chain of custody ... aimed at criminal justice.*"

Others indicated that this dimension, in RI terms, is developed by the way that students are taught in the discipline. The discipline is regulated by a code of ethics that is taught as part of professional communication in the last year of a student's studies,

"... in ... the last semester, ... the last term. ... So, it's not a thread that's being threaded from ... year one all the way to years four and five. It's like, ohh by the way, you're about to like start working. Ethics. Don't be dodge."

This conceptualisation suggests that students are simply being taught what is right and what is wrong, based on disciplinary standards and are not necessarily being empowered with the skills and dispositions to understand and engage RI in the discipline any further. The researcher who noted this suggested that this practice was problematic, "*I think because ... what we do holds so much weight. And if it's incorrect, it can have far-reaching consequences. So, it's important that we are all aware, and do the right things*". But this observation did not go beyond simply noting the significance of RI within the space of the discipline.

Overall, this dimension, represents complying with behaviours both related to RI practices and values and disciplinary expectations. We have seen that there is some conception around knowing that a certain behaviour is important for being viewed as a legitimate actor in a given space, and that researchers comply with this to a greater or lesser extent. But the behaviours are not yet incorporated into a researcher's sense of identity or way of being, but by performing the appropriate behaviours and displaying the correct attributes one can take a step towards strengthening legitimising social relations and hopefully developing further.

Engaging epistemic relations and social relations through participants' narratives

I conceptualised the research question '*how do emerging researchers, based at UCT, engage with RI values, in the context of their disciplines?*' with an underlying assumption that the discipline was the key factor that mediates the practices of researchers and their engagement with RI. The answer has proved to be less clear cut, less simple; the relationship that participants have to their disciplines is one which presents as deeply personal and is reflected in how they conceptualise their personal and academic identities.

This section attempts to convey the operationalisation of the LCT specialisation dimensions through the participant interviews. This will enable me to highlight the way that different specialisation codes influence and interact with each other and allow for a deeper understanding of the participant, the way they perceive their discipline and the way that they engage with RI.

Ashley

While Ashley is expected to conduct research in public governance, she has a strong affinity for the content which she teaches. She conceptualises her researcher identity as being that of a research methodology lecturer,

"I was considering now what is my discipline? Is my discipline actually what I teach? Or is my discipline public governance? So, I just stuck with it's what I teach and it's where my research has not been, at the moment because remember my research has always been about my degree or where I was working. And I haven't been in the academic space for long enough to now get myself an actual, this is where I want my niche to be."

This fluid conceptualisation of her disciplinary identity means that definitively answering my research question in relation to the discipline is somewhat more challenging. However, there are nuggets we can pull out of Ashley's interview.

There is some indication that the translation device can be related to the discipline through '*knowledge as reliable*'. In her practice, as a research methodology teacher, she indicated that "*we need to go about it [research] in the best possible way, ... that's what I teach. So, it's all about what is the context? What is the research needing? What questions need to be answered and then we decide how we're going to go about doing that and what's the best?*". While Ashley is engaged with the discipline through the generic

space, it is possible to assert that the discipline requires minimum standards of research and knowledge production, therefore displays at least '*knowledge as reliable*', if not '*knowledge as practice*'.

When it comes to combining engagement with the discipline and the generic, it is possible to see typologies of both the ER and SR dimensions.

"I keep coming back to it's good to be curious about every single thing. That's what makes me a good teacher. And that's what makes me a good supervisor, and is that enough? Because for me I think it is enough, ... I could write about research, I could write about struggles that students have when conducting research. There is actually research that can be done with researchers."

This combines the typologies of '*knowledge as concept*', '*knowledge as practice*' and also '*knower as awareness*'. It speaks to the disciplinary and generic value of specialised knowledge and also practicing that knowledge with different stakeholders through the teaching and supervision relationships. But more than this, it adds a layer of '*knower as awareness*', in that Ashley is aware of the behaviours that need to be practiced and recognised in the disciplinary and generic spaces. Her deep internal connection is demonstrably with the generic rather than the discipline and this is how she is developing and framing her identity. This means that a clear answer about what the discipline values, ER or SR is not fully possible. But there is sufficient evidence to suggest that it can be placed in the knowledge specialisation code.

On the matter of disciplinary engagement with RI, it is not reasonable to posit an answer based on the evidence before us. One might suggest that because it is in some way integrated into research methodology teaching that it at least demonstrates a '*compliance approach*' but taking a formal position would not be fair based on this single interview. Ashley on the other hand, demonstrates a deep personal, explicit connection to RI, in a way which suggests compatibility with her personal, researcher identity. Ashley's engagement across the translation device, specifically on the topic of RI can be found in her assertion that

"for me, ... it's purposefully thinking through and working out exactly how you're going to follow the principles in every part of the research that you do. So, from deciding what kind of research you're gonna do with whom ... how you're gonna do it, how you're gonna go about it, what you can do with the information afterwards, how you going to report it?"

Here Ashley demonstrates '*knower as awareness*', '*knower as compliant*', '*knowledge as practice*' and, '*knowledge as reliable*' within the same statement. Furthermore, it is possible to argue that Ashley demonstrates the qualities of a '*diligent researcher*', one who is both aware of compliance requirements

and their importance and also engages in and advocates for RRs, displaying both '*knowledge as practice*' and '*knower as awareness*':

"I've been following these codes of ethics now, the research integrity codes and looking at that closely and teaching that as well. And the ethics, all the things that students all need to agree to. So, all those things I need to follow as well. ... And when issues arise ... it's almost immediately, but how can that be ethical?"

It is clear that for Ashley, RI is an explicit practice and one which is compatible with her own identity in a generic space.

Joyce

Joyce also works in a generic space. She frames her own practice and identity as leaning towards the social. But she practices her discipline (education and development) in the context of another discipline (engineering), where she is engaged in generic work of teaching professional communications and ethics. This results in engagement across the translation device as she shifts from the enactment of one code to another. She demonstrates the dimension of '*knower as awareness*' in her understanding of her disciplines *"I suppose ... the discipline is what I understand it to be. ... So, my understanding of philosophy is how I use it and how I see it to be useful and the same with curriculum planning or development. [How] I use it in my situation in my context"* where the knower is practicing behaviours or dispositions. She demonstrates the dimension of '*knowledge as reliable*' in her understanding of her area of practice *"I like the practicality. I like the problem solving of engineers"* where her field of practice is realised in a different discipline and therefore framed by ER meeting certain disciplinary standards. This affinity for her field of practice is extended into the '*knowledge as practice*' dimension when she argues that engineering is *"systems orientated, its solutions orientated and I'm that kind of person"*. And finally, she displays engagement with SR in the '*knower as awareness*' dimension when she asserts that *"with education and curriculum planning, you take on board what aligns with who you are. And your own, skill, talents, knowledge, and identity"* therefore aligning herself with multiple aspects of the translation device as she displays her personal preferences and perception of her own identity.

Joyce positions RI within her field of practice as holding two typologies, simultaneously, *"it's how you do what you do. And it needs to be aligned with one's own personal values and a community's values"*. Here we see engagement of '*knowledge as awareness*' in that it involves active enactment of acceptable behaviours and also '*knowledge as reliable*' in that there is an expectation to meet certain disciplinary (engineering) standards. Lastly, she argues that her generic teaching could be viewed as a '*knower as inherent attributes*', in the active awareness of the behaviours that she seeks to develop in the students, *"You're equipping students to be researchers, to have research integrity, to be ethical. All those things have*

to be built in." Joyce is advocating for the development of an internal moral compass for the students, one which will habituate them into being responsible. While her integration of RI is purposeful and intentional into the generic space, it is not clear the extent to which the discipline (engineering) has taken up and integrated her dispositions which lean more into the SR space. There is an understanding that the approach to RI in the discipline does lean more to a '*compliance approach*', and this is in line with the disciplinary preference for stronger ER dimension.

Volcanoes

I have chosen to present Ashley and Joyce first and together rather than following my prior preference for alphabetising the reflections and analyses. This choice was based on (i) the fact that both participants hold a qualification in one discipline and work in a different disciplinary space, (ii) both are engaged predominantly in teaching in generics and finally (iii) both included volcanoes on their island maps, with similar motivations for their inclusion.

These participants demonstrate quite clearly that academic identities are developed by individuals in dynamic and complex environments and are multifaceted. They take into consideration their whole field of practice, that is the whole pedagogic device, rather than just a focus on research, as was the guide for creating their islands. And these two participants alone are enough to support Henkel's argument that academics are not a homogenous group of people who perceive the world in the same way (2000). The relation of qualification versus field of practice is one which clearly brings tension into the space of both participants, which they confront on a regular basis. They both find some level of comfort in teaching largely 'generic' material, which is informed variously by their qualifications, experiences, and personal identities.

The use of the volcano metaphor was a demonstration of curiosity beyond their generic practice and disciplines of qualification. The volcanoes also represented the energy and excitement that they felt towards the possibility of engaging in research collaborations and leveraging different skills. Ashley commented that

"that is why this curiosity crater ... blows up all the time, because ... everything excites me and I'm curious about everything, but it's a volcanic eruption each time because ... [it] is not helping me to put together a research identity. It's helpful in all aspects of my work, the fact that I'm curious about anything that's happening, but what I am saying is ... how can one person be interested in everything?"

She settled on the idea that it was good to be curious about many things as it allowed her to grow into a good teacher, leveraging both '*knower as awareness*' and '*knowledge as practice*' in this digression

which combines ER and SR typologies. Joyce, on the other hand used the metaphor to convey her *"passion and emotion and energy"*, for a range of different research activities, which she recognised as *"energy [that] comes out in whatever I do ... it's completely controlled and completely positive"*. Joyce asserted that this was an internal, personal disposition and therefore we can align it with the *'knower as inherent attributes'* dimension, demonstrating her preference for strong SR practices.

Brook

Brook is comfortable blending ER and SR codes to enable the ER preferences of her discipline. The SR preference comes across either as a personal, internal drive, or a shift in the way the discipline produces new knowledge. In describing the work she has recently conducted, Brook starts in a weaker ER dimension, *'knowledge as reliable'*, when she considers the legacy of the discipline and the epistemic foundations she is building upon. She acknowledges that the knowledge produced in the past was done so under different conditions, but that some of the 'facts' still hold legitimacy. She shifts into a *'knower as awareness'* dimension as she describes her process for reflecting upon the information, here she exercises the powers of choice with which she is enabled, as a disciplinary knower. The *'knower as awareness'* dimension is underpinned by a strong personal sense of *'knower as inherent attributes'*, where her preferences for moral and ethical practice hold sway. She makes the active choice to leverage potentially problematic disciplinary knowledge from the past, to use it, but to supplement it with reflections and different areas of knowledge to produce new knowledge that can be seen as legitimate for inclusion in the disciplinary discourse. In coming full circle, the new knowledge that is produced is framed in a *'knowledge as concept'* dimension.

"And then they [the sources] talk about, talk about [a] marginal landscape, and this was not a great place to live and, only people who were rough and difficult and savages would live in this kind of area. When I go to these areas ... I sit in the landscape and think about is this really marginal? Or do you just have to [have] ... an incredible amount of knowledge to survive here? Like the people who lived here weren't savages. These are people who are ingenious, knew how to seek out areas of plenty and what seems marginal, is actually not."

It is possible to see the disciplinary preferences towards varying degrees of ER and the use of her personal SR practices to support the epistemic project. Given that the practice of SR is framed, in Brook's interview as a personal choice, rather than a disciplinary expectation, I have placed her in a knowledge specialisation dimension. But it is crucial to acknowledge her own personal choices and preferences to using a range of SR practices and typologies.

When it comes to RI, Brook explicitly integrates responsible practices into her own disciplinary engagement. She feels no need to contest RI, seeing it as complementary to her own work. In her self-presentation we see a *'diligent researcher'*. She is aware of different compliance processes that are required, indicating that a recent project has *"taken me about a year and a half to get all the permissions in place"* and that there is at least a demonstration of *'knower as compliant'* at play in her space. Brook demonstrated some evidence for *'responsible approach'*, in other words, *'knower as awareness'* in addition to only just the *'compliance approach'*, when reflecting on her engagement with RI training:

"I do think that we can improve practice across the board if we learn from other bases. And some people are much better at this than other people. ... there are some disciplines that are super clued-up and others that are really way behind. So, it allows for that transformation, influence..."

Coral

Coral presented herself and her discipline as clearly embedded in a knowledge code, with preferences for a range of ER. She presented a range of arguments in favour of positioning her own day-to-day practice as having relatively weaker ER but underpinned by a strong favouring of *'knowledge as concept'* as a guiding principle. The varied presentations of *'knowledge as reliable'* and *'knowledge as practice'* supported working towards *'knowledge as concept'*.

Coral asserted that her discipline followed a code of ethics in a *'knowledge as practice'* dimension and that it was well integrated.

"Yes, ... all the approval and regulatory work that needs to be done is a lot and no, nobody likes doing it, but you know it's not it's not a negotiable. You have to do it, you deal with people ... with their ailments ... with their personal information that's usually sensitive. So ... there is no room to disagree."

She suggested that the integration was implicit, rather than purposeful and explicit but also that there was no space to contest or reject RI, owing to the nature of the discipline. She further identified RI practices in a *'knowledge as reliable'* dimension, essentially a tool that enabled the production of valid knowledge that could reasonably be included as legitimate disciplinary knowledge.

"So, honesty, integrity, transparency, good research practices, I mean it's in-built. ... there are things that you do not do ... to carry out your research, there are all these criteria you have to meet you have to do ... obviously ethical approval, all of that. ... It's a framework that's there and you don't mess with it."

This suggests that Coral's own approach to RI is a *'compliance based'* one, and that this is likely the position of her discipline too. It is worth noting that Coral identified RI values as important to her own

practice, before the interview turned to RI. She indicated that her personal preferences impact her work and the way that she conducts herself and this also came through as *'knowledge as reliable'*,

"the forest [of honesty], ... it's because I wanted to show how much space it's taking up on the map, so to me, honesty is obviously a really, really big thing. So that's one of the reasons I did it. I chose that ... because I wanted it to occupy a large part of this peninsula."

Her personal values in this case are well aligned with what she understands the discipline to expect of her and this therefore enables her approach to research and RI.

We can therefore describe Coral as based in a discipline which has strong preferences for ER, and that Coral's own identity is well aligned with these preferences. There were almost no references to the relations of the discipline framed in any SR preferences or typologies. On the matter of RI, we see a *'compliance approach'*, which is implicit but viewed as compatible.

Isla

Isla's description of the values and practices in palliative care support the notion that it is a discipline which meets the criteria of an *elite* specialisation code. Isla's understanding of the space demonstrates that there is a slight preference towards ER over SR. But she also demonstrates the important role of SR in being a disciplinary actor. The focus on ER is demonstrated by frequent references to *"evidence"* and *"knowledge and practice"*. She regards the discipline as engaging at multiple levels and therefore it can be related to the dimensions of the translation device in many ways. *'Knowledge as practice'* is apparent when she reflected on *"how to integrate and implement palliative care in our context"* and then this shifts to valuing content, *'knowledge as concept'*, when she spoke of building *"evidence from lower- and middle-income countries' perspectives"*.

She suggested that those in the discipline shifted easily from ER to SR when she considered expectations related to behavioural competence, driven by *'knowledge as practice'* but expressed as *'knower as awareness'*. A natural blend of the two would be expected in an elite specialisation code.

"[A]n ability to engage from a in a very professional way with patients. [T]o understand the research context and the research, the ethics of doing research. So that ... the patient, ... often vulnerable patients, ... who would be the participant is protected and their rights [are upheld]. ... their preferences are heard and followed in the research process. ... there's been a lot of development of relationship between the research assistant and the participants."

Blending of codes was apparent throughout the interview, it did not cause any disruption for Isla, on the contrary it came across as quite natural.

It is clear that many of the values expounded by RI are already well integrated, explicitly into Isla's practice and that she feels no need for contest. She spoke freely of honesty, reliability and accountability before RI was explicitly brought into the conversation. On this matter she suggested that her own engagement with RI was surface-level and not as deep as she would like, with a hope of strengthening her engagement. When we did discuss RI values, she conceptualised them in a '*knower as compliant*' way, which is aligned with the social expectations of the field and her own superficial engagement:

"Absolutely, honesty and being accountable in terms of how one analyses and reports the findings is really important. And would be integral. And then in terms of the presentation of the findings, which may challenge norms."

What is particularly interesting about this assertion is the close alignment it has with practicing the discipline, '*doing*' in the discipline and her own sense of self. While she may not be deeply engaged in RI it is clear that she values its practices as a means to support productive and meaningful disciplinary outcomes, therefore there is no indication that she feels the need to contest RI. She also conceptualises RI as '*knower as awareness*', to some degree "*being mindful of the data that you've collected and the participants who've provided their data and respectful of their participation and the data that we've gathered from that.*"

Jean

Jean's description of her discipline's practices suggest that she is located in an *elite* specialisation code. There is evidence for valuing both SR and ER throughout her interview, although her own personal inclinations demonstrated a preference for a knower code.

Jean indicated that '*knower as inherent attributes*' is a critical legitimating factor in the discipline. She positions herself within the discipline with this in mind and leans on a combination of ER and SR to forge her own sense of identity. Initially, she spoke of leveraging '*knowledge as practice*' in focussing her research on German Studies.

"... looking at teaching and learning collocations. And for language teaching, my research has kind of been two-pronged. So, I have a background in linguistics, but also in German Studies, and I've kind of brought my applied linguistics background into this discipline."

This is supplemented with '*knower as awareness*' which demonstrates her understanding of the need to display certain behaviours as a disciplinary actor, but also constructed in a way that enables her to create

a meaningful self-identity: "... what I've done ... is [develop] ... my own identity as an applied linguistics German researcher." And finally, this blending of specialisation codes is brought full circle to the dimension with the strongest, relatively, ER, 'knowledge as concept', "I'm interested in corpus-based research and in developing, teaching, and learning materials."

Jean's research expresses 'knower as compliant' in a way that allows her to practice disciplinary discourses and also enables her students to do the same, thus supporting the view that SR are important in the disciplinary space as a tool to legitimate a student or researcher. She described a recently established collaborative research project as a

"virtual class excursion where ... students get to speak to each other in German, get to know each other a little bit, ... enhance their communicative competence, ... to have that feeling of ... German's a really small discipline ... so, I think you can feel quite isolated, so to be part of a bigger group."

This example allows for strengthening of SR and aims for 'knower as awareness' students and researchers engage in the dimension of 'knowledge as practice'. While SR play an important role here, the underlying ER are also important to the research outputs, the "method itself, the didactics" are presented as 'knowledge as concept' and as motivation behind the research. For Jean this blending different dimensions was done in such a way that they enhanced and supported one another Jean is aware that her views may not be reflective of those across the discipline, an important point to note and one which again comes through 'knowledge as practice' and 'knower as awareness' especially with regard to her preferences for research,

"I like the kind of linguistic approach to the language itself and what ... it's ... describing what is out there and how it is. ... how we are teaching, and how the students are learning, and how they are receiving it?"

Jean operates in a discipline which presents as an *elite* specialisation code, easily shifting between a focus on ER and SR. The knowledge of the discipline is clearly an important factor, but as important are the dispositions Jean displays as an actor. As an emerging researcher, she is still cultivating this identity, but she is conscious of what is expected of her and is crafting herself in a way that she can align with disciplinary expectations and also keep her own sense of self.

Lerato

Lerato is undoubtedly embedded in a knowledge specialisation code. The ER were strong throughout. It was not until we discussed RI that SR even entered the discussion. The driving force of Lerato's space, is strong ER, as represented by 'knowledge as concept'. When 'social practices' are considered, they are

also presented as '*knowledge as concept*', the underlying message being that there is an insufficient understanding of the content of social knowledge, which the discipline needs to incorporate to strengthen its ER.

"... a lot of what we've understood technically is not a problem. It's when the social part comes into contact with the technology. ... Because water is also such a personal thing for people and a religious thing. ... I think that a lot of our research, our technical research needs to have some understanding of that, because I think that ... might change how we package some of the innovations that we would come with."

Relatively weaker ER are visible when Lerato considered the ethos of teaching in engineering, the ER are framed as '*knowledge as reliable*'. For her this represented a way for students to access disciplinary discourses and acted as a means to enable strengthening of their own ER.

"The ethos of our teaching is that we are building ... infrastructure to serve the next generation. We clean water to ensure that people don't die from diarrhoea ... that comes with a lot of power. And it comes with a lot of ... responsibility in being sure that you actually are ... comfortable in the knowledge... So, you have to know, because you hold so much power in the things that you do so."

Themes around varying strengths of ER were visible throughout Lerato's interview and also in her island map. The island map process was a genuine struggle for her as it was so different from her own disciplinary discourse. She spent a great deal of time conveying disciplinary content in (or 'research areas') the exercise, rather than grappling with her own identity, which in itself is telling.

It is interesting that throughout the interview Lerato presented her discipline and her own preferences as strongly favouring ER but did acknowledge that RI was framed more in SR typologies. It is perhaps because of this clash in codes that engineering can be firmly identified as a '*compliance approach*' space, supported by evidence from Joyce's interview too. For Lerato, RI is integrated "*but I don't know how to explain it. ... I can't quantify, I can't explain it and give you examples of how we know, we just know.*" I would argue that while RE is integrated to some degree, RI is hidden, not integrated, and generally not considered. To her credit, Lerato's prior engagement with RI training did show her its value and she asserted that "*I don't think it should be a box-ticking exercise ... I think it should be taken seriously and it should be a serious requirement for the first year [of postgraduate studies]*". She could not, however, outline what it might look like to be taken seriously. For her the practice is implicit but also compatible, she leans to a '*compliance approach*'.

Discussion: Addressing the research questions

Summary of findings

Specialisation code findings

In summarising the findings related to the specialisations codes identified in this research project, it is possible to see that individual researchers leverage both epistemic relations and social relations to forge their sense of identity within their disciplinary spaces. The ER and SR practices of their disciplinary knowledge are certainly part of the picture when it comes to factors that mediate how researchers understand their identity and their positioning within a discipline. Both epistemic relations and social relations were represented along a spectrum of the strongest, relatively strong, and relatively weak relations. Engaging these specialisation codes individually and through the RI lens enabled the relationships between relative strengths of ERs and SRs to be explored. This also gave me access to the participants understandings of their own researcher identity development, in the context of their disciplines.

It has been demonstrated, based on this data, that medical virology, civil engineering, biological anthropology and anatomy, education and development in engineering, and public governance and research methodologies (as represented by Coral, Lerato, Brook, Joyce and Ashley, respectively) sit within a *knowledge* code, while German studies and palliative care (as represented by Jean and Isla, respectively) and the idealised form of RI, where researchers take the '*responsible approach*', sit within an *elite* code. This is an overall assessment of the relative positioning of the disciplines as represented by the researchers in this study, rather than a statement about how the researchers within the discipline leverage varying strengths of ER or SR as they conduct themselves and engage with others in the discipline.

RI findings

In summarising the RI findings of this research, one can see a range of approaches and different degrees of expression. Ashley, Brook, and Jean are identified as researchers who likely take the '*diligent approach*', Isla takes the '*responsible approach*' and Lerato and Coral take the '*compliance approach*'. Positioning Joyce was more challenging as she is not actively involved in research, one might assert that she advocates for a '*responsible approach*'.

The disciplines, however, were far more challenging to position. The challenge in positioning the disciplines lies in the small sample, which cannot reasonably be argued to be fully representative of each discipline under consideration. We can say, with some certainty that engineering (represented by Lerato and Joyce) leans towards a '*compliance approach*', and it may be possible to make the same argument for public policy, biological anthropology and anatomy and medical virology (as represented by Ashley, Brook, and Coral, respectively). It is also reasonable to posit that palliative care (represented by Isla) likely leans to the '*responsible approach*' given the nature of the discipline. Speculation on German studies is not reasonable for it has been shown that, in this discipline, there is little sense of urgency associated with the practice of RI.

Shaping identity

My first research question was concerned with understanding the factors that emerging researchers believed shaped their identities. It is clear from this research study that the identity of emerging researchers is shaped by a range of personal characteristics and disciplinary influences. It is also clear that trying to separate out an academic's identity as it relates to research is a challenge. Given that my participants were, to varying degrees, operating in all fields of the pedagogic device, teasing out this specific element presented some challenges and demonstrated the interconnected nature of the device. There is also evidence that a researcher identity integrates into all aspects of academic identity, so focussing on this discrete element might not have been the most informative approach. Regardless, the participants expressed their researcher identity as being multifaceted, influenced by their own sense of being, their personal character traits, conditioning from their discipline (or attempts to push back against this conditioning), their engagement with students, their research and overall, the contexts in which they practiced their academic role and conducted their research.

The role of the discipline

My second research question was related to the role that an emerging researcher's discipline or profession may play in shaping their research identity. A researcher's discipline does play a role in shaping their sense of identity (e.g., Lerato's discomfort at having to pick a research area and build depth, and how her current research area conflicts with her own teaching appointment or, Jean's observation that others in her discipline have a sense of disciplinary identity as they were born German). However, this identity is shaped by multiple factors and these factors exert different levels of influence depending on the person and the knowledge structure of the discipline as well as the activity in question

(e.g., Joyce who is qualified in one discipline, education and development, but practices in a generic engineering space or Isla who argued for the social side of her discipline when discussing relationships with patients and how this influences data collection versus the discipline's strong epistemic relations where gathering evidence and integrating data were valued).

It is clear that the discipline is not the only factor in shaping researcher's identities, and from the interviews it is possible to speculate that personal character traits were at least as important as disciplines in embedding certain practices and ways of being (e.g., Brook, whose internal moral compass was deeply developed or Coral who made the active choice for her 'forest of honesty' to take up a large geographical space on her map). It is certainly far beyond the scope of this research to delve more deeply into academic identities, but this window into researcher's self-perceptions is certainly illuminating for this research.

The nature of disciplinary knowledge

My third question related to the nature of knowledge in the disciplines and whether this played a role in the perceived compatibility with RI values and practices. To some extent this study suggests an affirmative response, but again this is a question with many layers of nuance. For those working in generic spaces (Ashley and Joyce), it appeared as though their personal values and dispositions were more likely to be a mediating factor. This is potentially due to the fact that they are practicing their own disciplines in the context of another discipline and therefore the discipline plays less of a mediating role. A different dimension in the LCT toolkit may prove enlightening here, e.g., autonomy codes.¹⁸ For others (Jean) there was less urgency in the discipline to take up RI values owing to the nature of the discipline. In this case personal preferences to drove engagement with RI.

Yet, in other spaces, the engagement comes across as less conscious and more compatible with the discipline, although to varying degrees from superficial (Coral) or deeply embedded (Isla, Brook). These participants are all based in the biomedical sciences, actors in this more general region are accustomed to a certain level of disciplinary mediation through legislated codes of ethics or practice. Where the engagement with RI presented as better integrated into disciplinary practices, it was also expressed through the values that the actors (Isla and Brook) identified to be important to them, personally. So,

¹⁸ "Autonomy codes explore the boundaries that practices establish around their constituents and the boundaries they establish around how those constituents are related together. They are analytically distinguished as ... positional autonomy (PA) between constituents positioned within a context or category and those positioned in other contexts or categories; and relational autonomy (RA) between relations among constituents of a context or category and relations among constituents of other contexts or categories." (Maton & Howard, 2018, p. 6)

here one can claim that disciplinary mediation provides a basis for legitimization of RI values which can be deepened through personal character traits.

In the last case (Lerato) there was an expression that RI values were important, but engagement was superficial and there was no attempt to imagine what deeper integration of RI into the disciplinary practice may present as. This discipline is also mediated by a code of ethics thus setting a minimum standard that actors would be expected to meet. But, as Joyce described, the approach is largely one where minimum compliance is expected of the actors.

Research integrity in the context of the disciplines

My final question attempted to unpack how emerging researcher understood RI values within the context of their disciplines. All participants expressed that RI values were important. Many of them identified some elements of the Singapore Statement as values which directed their own practice before the interviews explicitly integrated RI into the conversation. This suggests that there is reason to believe that the participants value some RI values as a baseline. But it is also clear that this baseline presents differently as a result of both the researcher's personal characteristics and the disciplinary context in which they are situated. The baseline, or bare minimum expectations, placed on them by their disciplines and the way in which RI is framed, either as compliance, responsible or diligent approaches relies on a combination of the expectation baseline (e.g., the requirement to follow a code of conduct or ethics code), the disciplinary context (e.g., the extent to which some form of RI training is formalised or not, or required or not), and the personal character traits to determine the approach that an individual has preference for.

It is therefore important, for institutions to create a space that allows for the disciplinary nuances to be respected whilst still enabling or supporting training in RI. Indeed, Labib *et al.* have advocated for "the need to for research institutions to develop a comprehensive training plan ... [which] tailors training to disciplinary-specific contexts" (2022, p. 255), this is certainly supported by the data in this study. Data in this study also supports the conclusion of Huybers *et al.* (2020) who suggest that a "one-size-fits-all approach to research integrity support is not expected to be successful" (p. 168) and that a "qualitative study might help interpret the results and provide further insights" (p. 168). This qualitative study has attempted to understand the different ways that disciplines specialise and legitimate their knowers and their research practices and the spaces they provide emerging researchers to develop a disciplinary researcher identity.

Lastly, it has been shown throughout this work that personal character traits (e.g., Brook's self-identified strong internal moral compass, Lerato's sense that engineers are missing out by not engaging social practices and Ashley's internal drive to view the generic 'research methodologies' space as her discipline) do play an important role in the development of disciplinary identity and therefore the extent to which a researcher is inclined to engage with RI and the degree to which this occurs. Given the sampling methods for this study (researchers who had previously participated in some type of RI training), and in light of Katsarov *et al.*'s assertion that "learners participating in courses voluntarily, tended to acquire more knowledge than participants of mandatory courses" (2022, p. 951) is worth bearing in mind that these participants may well be more likely to express personal traits that enable and support RI practices in the context of their own disciplines and researcher identities.

Limitations and recommendations for further research

Some limitations were considered at the start of this project, these were related to the purposeful selection of participants who had already completed some form of RI training, the number of participants who were recruited and the tools used in the conceptual and theoretical framework. I have already noted the possibility that LCT's autonomy code may prove to be a useful conceptual tool for future research.¹⁹ It also stands to reason that a similar study with (a) a larger cohort size and (b) including participants who may not have completed any form of RI training would present different data for analysis. Indeed this was a sentiment that I identified as I engaged with data from participants based in the Health Sciences Faculty at UCT. Their wide range of data suggested that the degree to which it is possible to conjecture that any of these participants, influenced by their disciplines, can be identified as taking a particular approach to RI is limited. This further extends to making an overall assessment of the discipline's approach to RI (some participants, Coral, suggested a '*compliance approach*' to RI while others, Isla, suggest an approach that was more in line with a '*diligent approach*'). It is therefore my recommendation that additional research is conducted, specifically in the Health Sciences context, using a broader range of disciplines, more representatives from within that faculty and a larger number and demographic of participants. While this study has been able to suggest baselines for individuals, it has not been able to extend findings beyond the individual to the discipline or region more broadly.

¹⁹ In exploring other "relations among different sets of practices, such as different forms of knowledge, different disciplines..." autonomy allows for distinction between "their constituents (positional autonomy) and between how those constituents are related together (relational autonomy)." (Maton, Autonomy, 2021)

Additional limitations have emerged as data analysis progressed. Joyce identified the difference between researchers and training undergraduate students, in her capacity as a professional communications lecturer in the Faculty of Engineering and the Built Environment. Another recommendation for extending this work is to clearly differentiate and study students at different levels of study (undergraduate, masters or doctoral) and to attempt to understand their engagement with RI (as provided by some level of disciplinary mediation, for example Joyce and Ashley's generic teaching space in the context of different disciplines) or indeed the different types of RI training needed by these different types of student.

All participants felt that RI was compatible with their discipline, while Isla, Ashley, Brook Jean, and Joyce demonstrated explicit practice and Coral and Lerato implicit practice. Therefore, positioning this research as I did, assuming that the discipline would be the mediating feature was perhaps naïve. In reality there are many layers of personal and disciplinary influences that affect a researcher's engagement with RI, and further research, using similar tools and approaches, is needed if the question is to be answered through the lens of the disciplines. It is also clear that the environment which disciplines provide to researchers is dynamic, and in the context of a research-intensive university, the full pedagogic device (that is knowledge production, recontextualisation and reproduction) impacts their identities and sense of engagement with RI. The extent to which RI practices are implicit or explicit can be affected by disciplinary practices and whether the knowledge codes or RI and the discipline are compatible or clash and create either an enabling or indifferent attitude towards RI and its values and practices. Trying to tease out only one element of an academic's identity, as a researcher, results in the development of blinkered picture. Therefore my suggestion for a future avenue of research is to explore RI in the context of an academic's full scope of practice and how the integrity of research impacts on other areas of their work. This would go some way to addressing the gap noted by Huybers *et al.*, that 'academic backgrounds' as one factor that might be responsible for different perceptions of RI and adding that this understanding could "inform the crucial issue of suitable pedagogies required for successful targeted interventions" (2020, p. 169).

There is certainly scope for more research related to disciplines and RI engagement. It is vital that RI professionals, that is, those who operate in this field of study rather than in academic disciplines, engage with these challenging conversations in order to unpack the multiplicity of factors that mediate engagement with RI, either through a disciplinary lens or with researchers as individuals.

Conclusions and reflections

Grappling with researchers as they confronted their identities and considered RI has been an instructive journey. The participants benefitted from the purposeful reflection on their researcher identities but moreover it allowed me to develop insight into how a small subset of researchers from the ERP engage with their disciplines as they craft their identities and the extent to which RI is naturally, purposefully, or implicitly embedded into their practices and value systems. The insights gleaned from this work should be viewed as a pilot or emerging set of insights that have the potential to shape the way that the ORI engages with researchers, especially in the context of RI training, although this should be informed by further research.

I asked my research questions thinking that the answer would be straightforward or relatable to one or two dimensions. In reality, in the data presented by the participants, researcher identities, engagement with RI and the role that the disciplines play is far more complex and nuanced. Thus there is a limitation to the kinds of conclusions I am able to draw. But it is possible to answer the question about explicit or implicit engagement and compatibility or incompatibility with RI.

Taking normative RI values, for example those prescribed by the Singapore Statement, and trying to understand how researchers engage with and incorporate them into their practice is an important step for RI as a field of study. Not only does this demonstrate a willingness to engage with researchers, but it also supports building RRP in a more holistic manner, rather than simply providing a list of rules that need to be followed and expecting appropriate, informed action and responsible decisions. The academic environment is a complex one and it behoves the RI community of practitioners to question how the legitimization codes for specialising knowledge in the disciplines plays out for individuals and their research contexts and the extent to which normative RI values are compatible with these. Based on this early evidence there is certainly reason to argue that RI values are compatible with a range of disciplines, but the extent and level of engagement differs based on the nature of the discipline's knowledge structure and, importantly, on how the researcher interprets and acts on those values. There is an argument for recommending that collaborating with those in the disciplines, researchers who have a better grasp of the knowledge code of their disciplines, could enable emerging researchers to engage with RI activities through their disciplinary lens and that this might be one meaningful approach to enhancing RI training. This perspective is certainly borne out by the vision of the ORI director for future work of the ORI, specifically around more discipline specific learning interventions and empowering disciplinary actors to lead these interactions.

Leading practitioners of RI are trying to shift away from the '*compliance approach*' to the '*responsible approach*'. This study has shown that a blend of these approaches could result in a '*diligent researcher*', but evidence for the diligent approach shows that this requires a high level of awareness of the specialisation codes in the disciplines, in combination with personal values that are aligned with RI, and an explicit blending of these two codes and practices.

Using LCT specialisation concepts and tools to uncover epistemic relations and social relations to knowledge and knowers has been useful to get to grips with the way researchers understand and practice their discipline. These tools are recommended for further research seeking to address similar questions. The size of the sample means that it was not reasonable to generalise from individual perceptions of ER and SR into the discipline as a whole, but the study has certainly offered valuable insights. While the intention of this research was to take a narrow focus on the 'researcher' element of participant identities, Bernstein's pedagogic device was a helpful lens to apply to the interviews, enabling a view of the academics' whole field of practice. This did mean that the intention to focus on 'researcher identities' was obscured to some degree and therefore is a limitation of this research. However, acknowledging that an academic in an HEI has a multifaceted identity (and is more than only a 'researcher') and applies said identity in different contexts is an important learning of this work and a key outcome for further work in this field of study.

This project which took a creative approach to understanding engagement with research practice and constructing and interpreting knowledge with the participants has shown that there is more to RI than simply expounding a set of rules and normative values. The onus is upon RI practitioners to understand the perspective and values of the researcher, engage with the epistemic relations and social relations legitimated by their discipline and work with how those values impact on RI practice in the disciplinary milieu.

[words: 29 609]

Bibliography

- Abdi, S., Pizzolato, D., Nemery, B., & Dierickx, K. (2021). Educating PhD Students in Research Integrity in Europe. *Science and Engineering Ethics*. doi:10.1007/s11948-021-00290-0
- Bernstein, B. (2000). *Pedagogy, Symbolic Control and Identity: Theory, Research, Critique (revised edition)*. Oxford: Rowman & Littlefield.
- Boughey, C., & McKenna, S. (2021). *Understanding Higher Education: Alternative Perspectives*. Cape Town: African Minds.
- Davies, M., & Devlin, M. (2010). Interdisciplinary Higher Education. *International Perspectives on Higher Education Research*, 3-28. doi:10.1108/S1479-3628(2010)0000005004
- Evans, N., Buljan, I., Valenti, E., Bouter, L., Marušić, A., de Vries, R., & Widdershoven, G. (2022). Stakeholders' Experiences of Research Integrity Support in Universities: A Qualitative Study in Three European Countries. *Science and Engineering Ethics*, 43. doi:10.1007/s11948-022-00390-5
- Haven, T., Tjldink, J., Martinson, B., & Bouter, L. (2019). Perceptions of research climate differ between academic ranks and disciplinary fields: Results from a survey among academic researchers in Amsterdam. *PLoS ONE*. doi:10.1371/journal.pone.0210599
- Henkel, M. (2000). *Academic Identities and Policy Change in Higher Education*. London: Jessica Kingsley Publishers.
- Henkel, M. (2005). Academic identity and autonomy in a changing policy environment. *Higher Education*, 155-176.
- Horn, L. (2022). Navigating Research Ethics. In J. Jansen, & D. Visser, *On Becoming a Scholar: What Every New Academic Needs to Know* (pp. 69-86). Cape Town: African Minds.
- Huybers, T., Greene, B., & Rohr, D. (2020). Academic research integrity: Exploring researchers' perceptions of responsibilities and enablers. *Accountability in Research*, 146-177. doi:10.1080/08989621.2020.1732824
- Jacobs, C., & van Schalkwyk, S. (2022). What knowledge matters in health professions education? *Teaching in Higher Education: Critical Perspectives*, 1068-1083. doi:10.1080/13562517.2022.2111207
- Kalichman, M. (2013). A Brief History of RCR Education. *Accountability in Research*, 380-394. doi:10.1080/08989621.2013.822260
- Kalichman, M., Sweet, M., & Plemmons, D. (2015). Standards of Scientific Conduct: Disciplinary Differences. *Science and Engineering Ethics*, 1085-1093. doi:10.1007/s11948-014-9594-0
- Katsarov, J., Andorno, R., Krom, A., & van den Hoven, M. (2022). Effective Strategies for Research Integrity Training - a Meta-analysis. *Educational Psychology Review*, 935-955. doi:10.1007/s10648-021-09630-9
- King, V., Garcia-Perez, A., Graham, R., Jones, C., Tickle, A., & Wilson, L. (2014). Collaborative reflections on using island maps to express new lecturers' academic identity. *Reflective Practice*, 252-267. doi:10.1080/14623943.2014.883311

- Komić, D., Marušić, S. L., & Marušić, A. (2015). Research Integrity and Research Ethics in Professional Codes of Ethics: Survey of Terminology Used by Professional Organizations across Research Disciplines. *PLoS ONE*. doi:10.1371/journal.pone.0133662
- Labib, K., Evans, N., Roje, R., Kavouras, P., Reyes Elizondo, A., Kaltenbrunner, W., . . . Tjink, J. (2022). Education and training policies for research integrity: Insights from a Focus Group Study. *Science and Public Policy*, 246-266. doi:10.1093/scipol/scab077
- Löfström, E., Trotman, T., Furnari, M., & Shephard, K. (2015). Who teaches academic integrity and how do they teach it? *Higher Education*, 435-448. doi:10.1007/s10734-014-9784-3
- Maton, K. (2014). *Knowledge and Knowers: Towards a Realist Sociology of Education*. Oxford: Routledge. doi:10.4324/9780203885734
- Maton, K. (2021). *Autonomy*. Retrieved May 27, 2023, from Legitimation Code Theory: <https://legitimationcodetheory.com/theory/autonomy/>
- Maton, K., & Howard, S. (2018). Taking autonomy tours: A key to integrated knowledge-building. *LCT Centre Occasional Paper 1*, 1-35.
- Mertens, D. M. (2015). *Research and Evaluation in Education and Psychology (4th Ed.)*. Thousand Oaks, California: Sage.
- Oxford English Dictionary (11th ed.)*. (2006). Oxford: Oxford University Press.
- Plemmons, D. K., & Kalichman, M. W. (2013). Reported Goals of Instructors of Responsible Conduct of Research for Teaching of Skills. *Journal of Empirical Research on Human Research Ethics*, 95-103. doi:10.1525/jer.2013.8.2.95
- Shaw, D., & Satalkar, P. (2018). Researchers' interpretations of research integrity: A qualitative study. *Accountability in Research*, 79-93. doi:10.1080/08989621.2017.1413940
- Shephard, K., Trotman, T., Furnari, M., & Löfström, E. (2015). Teaching research integrity in higher education: policy and strategy. *Journal of Higher Education Policy Management*, 615-632.
- Singh, P. (2002). Pedagogising Knowledge: Bernstein's theory of the pedagogic device. *British Journal of Sociology of Education*, 23(4), 571-582.
- Steneck, N. (2013). Global Research Integrity Training. *Science*, 552-553. doi:10.1126/science.1236373
- Steneck, N., & Bulger, R. E. (2007). The History, Purpose, and Future of Instruction in the Responsible Conduct of Research. *Academic Medicine*, 829-834. doi:10.1097/ACM.0b013e31812f7d4d
- Tight, M. (2014). Discipline and theory in higher education research. *Research Papers in Education*, 93-110. doi:10.1080/02671522.2012.729080
- UCT Policy for the Responsible Conduct of Research*. (2020, November). Retrieved from University of Cape Town Policies: https://uct.ac.za/sites/default/files/content_migration/uct_ac_za/87/files/RCR_Nov2020_senate_approved_with_preface_table.pdf

Appendices

Appendix A	The Singapore Statement on Research Integrity
Appendix B	Guidelines for preparatory creative exercise and commentary
Appendix C	Question prompts for semi-structured interviews
Appendix D	Sample of interview transcripts
Appendix E	Island maps and participant synopses
Appendix F	Informed consent forms

Singapore Statement on Research Integrity

Preamble. The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

PRINCIPLES

Honesty in all aspects of research

Accountability in the conduct of research

Professional courtesy and fairness in working with others

Good stewardship of research on behalf of others

RESPONSIBILITIES

1. Integrity: Researchers should take responsibility for the trustworthiness of their research.

2. Adherence to Regulations: Researchers should be aware of and adhere to regulations and policies related to research.

3. Research Methods: Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively.

4. Research Records: Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others.

5. Research Findings: Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.

6. Authorship: Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.

7. Publication Acknowledgement: Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria.

8. Peer Review: Researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work.

9. Conflict of Interest: Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as in all review activities.

10. Public Communication: Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views.

11. Reporting Irresponsible Research Practices: Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods.

12. Responding to Irresponsible Research Practices: Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of misconduct and other irresponsible research practices and for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record.

13. Research Environments: Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity.

14. Societal Considerations: Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.

Appendix B: Guidelines for preparatory creative exercise and commentary

You may complete this exercise using the tools that you are most comfortable with, for example a pen and paper or a digital 'drawing'. Please type up your reflective commentary.

1. Imagine you are an island or are on an island.
2. Identify the attributes, characteristics or features that define your **researcher identity**, as they **pertain to your discipline and your disciplinary identity**.
3. Now use these attributes to create and name places on the island you have imagined.
4. Your island can take any form you wish and the process that you use to develop the island should take the form that feels right to you.
 - you may want to think of the attributes first, cluster them and then develop the island from there or,
 - you may wish to draw an island and then place the attributes in the relevant locations.
5. Finally, take me on a tour of your island! Write a reflective commentary on the process you used to develop your island, highlighting any particular parts you wish to draw attention to and discussing the process that you used to arrive at your final product.
6. This map and reflection will be discussed in the interview, and I will ask for your permission to keep it as a research artefact and data source.

This exercise should take approximately 45 minutes to 1 hour to complete.

Appendix C: Question prompts for semi-structured interviews

- Informed consent pre-questions

Background

- Age, race, gender, nationality (demographic/biographical)
- Highest qualification and discipline; when qualification obtained
- Working in same discipline as qualification?
- Current involvement in research projects (either own, as a collaborator or as a supervisor) [interested in roles in research project, not specifically the research]
- Future goals for research
- What is your discipline's approach to 'how to' conduct research?
 - Do you agree/disagree with this? Why?
- Understand the knowledge of their discipline
 - Is knowledge (what you know) the focus of your discipline?
 - Is the knower (how you act/behave) the focus of your discipline?
- Understand role of research in discipline
- Do you feel like an authority (legitimate knower or researcher) in your discipline?
- When did this happen? (What markers? Qualifications, number of students mentored, number of publications?)
- How does your personal identity engage with your disciplinary research identity?

Discussion of map/commentary

- Take me through the process – how did you develop the map?
- What features were important to you as you mapped out your identity? Were they values, beliefs or practices? How do they relate to you as a researcher?

Discussion of RI

- Does the discipline have a code of conduct or ethics?
- What is your level of engagement with RI?
- What do you understand by RI values?
 - [Could be reframed as what values do you believe are important for RI? OR Is RI the absence of misconduct?]
- [Introduce the Singapore Statement]
- Is there space for RI values in your discipline? In your research?
- How do you view RI values in relation to your discipline? Are they (in)compatible? What would practicing RI values look like?
- Is there space for them on your map? Why?
- Please share an example in your professional life where you were faced with an RI challenge(s), how did you respond?
- What training or education in RI have you engaged in? Did it have an impact on whether/not you practiced/integrated RI into your map?
- Do you think RI is more meaningful when considered in the context of a discipline, or as a set of generic principles? What generic principles would you pick and why?

Closing

- Update to map and commentary as a result of conversation?
- Informed consent post-questions
- Thank participant

Appendix D: Sample of interview transcripts

D1: Brook

Biological Anthropology and Anatomy

Speaker	Text
PS	So, the first question is, I noticed that you are qualified in biological anthropology and anatomy. Are you still working in the same discipline?
B	Yes.
PS	OK. And could you describe your current involvement in in any research projects that you're working on?
B	So I'm PI on about 15 separate research projects at the moment.
	And then I'm a collaborator on maybe seven or eight other studies.
	So, it's a little bit diverse and not an easy question to answer.
	Umm, I think that's one of the things that's nice about being a biological anthropologist is that we are a humanity, a social science. And so, we are involved in many. We bring a different perspective to many kinds of biological research. So, I'm working with some geneticists. I work with ethicists. I'm also working in the forensic science space. I work in Bioarchaeology and with archaeologists and that space, and then I also work in human variation and understanding anatomy, but then also a component of what I do is medical anthropology, which is similar to public health. But more centred on not what are the public health crises? Because we know what those are, but why they exist. So, it's more on like structural violence and that kind of stuff, which is the anthropology component,
	so quite diverse aspects that I'm working on, and I and I tend to work in very collaborative interdisciplinary teams.
PS	OK. OK, that's great. And so, you said you're PI on multiple projects and as a collaborator, what is your role on those other collaborative projects?
B	This so some of them. I'm the anthropologist. So, like in forensic genetics I work with the forensic geneticist, and I bring the forensic anthropology. And I'm working with some people, umm, in in ancient DNA ethics and they're reaching out to me a lot because I've done a lot of work in South African ethics on ancient DNA and permissions, and so then they're drawing me in from the South African sector. And then sometimes I'm also just brought in with medical people and medical projects because of the anthropology. So, it's often, I mean, I'm brought in for the skeletal analyses or the anthropological perspective.
PS	So if I'm hearing you're right, you're your collaborations really depend on sort of the disciplinary knowledge a project needs from you. So, if it needs anthropological knowledge or if it needs South African ethical knowledge, that's OK. Thank you. Umm. So, what then are your future goals for your research career?
B	So one of the things that I like about my discipline and where I'm at with it is I'm involved in engaged in lots of really interesting projects.
	However, I am finding that I'm drawn in a lot of directions and so one of the things that although my curiosity part of my heart isn't willing to give it up.
	I need to try and maybe focus a little bit more in a specific area so that I can remain sane. So, I my goal would be to maybe in two or three-year intervals have more focused research, so like. Only bioarchaeology or only forensic or and not lots of different projects at one time.
PS	OK. OK. Interesting. OK. So, you sound like you, well you are working interdisciplinary research, which you've mentioned, and you've got lots of balls in the air. So, this is gonna be a slightly weird question, but what is, if we just pin it down, which is not really possible to Biological anthropology and anatomy. What is the approach to research like what is a typical day in a research researcher's life look like?
B	OK, so often through teaching or teaching somebody something, I'll notice something odd. And then so if I think it's quite an organic process like I'll notice a problem, or something that seems different and then shape that into a study to explore it. And I tried to involve students in my work.
	For example, I've just established this big network around the bony ear. So, I happened to notice that the ear canal looked big, and then I was talking to an ENT doctor, and they were like, wow, I've never seen ears this big. And then we started looking at some more contemporary ears and we were like, these are big ears. So, then we started to create a project to look at that. And there's a lot of digital techniques that we don't have in South Africa. So, I partnered with some expertise in Germany and now we have this massive project to look at the bony ear labyrinth. (Chuckles) And with it came with really cool funding. So,

	it's kind of it starts almost as this organic small thing, and then as soon as you bring in the international people, then it's having your materials transfer agreement and your ethics. And it's taken me about a year and a half to get all the permissions in place and establish all the connections. And now we're actually starting that work in August. So, it so I don't know if that helps illustrate sort of a normal process for me. Sometimes people just hear about me and invite me into things. But I think for biological anthropologist that tends to be more of like in the lab, we notice something different, or we notice a problem. And in order to address that problem, we create a study and bring in as many people as we can that we need to in order to accomplish it.
PS	OK. And do you like the way that this sort of typical day works, or do you think there could be improvements?
B	Is it efficient? Umm. So, I'm quite pedantic about the ethics and the permission, and that takes a long time to establish. Other people tend to take shortcuts. I think my life would be a lot easier if I took those same shortcuts. And technically I think my discipline is in in such a place that I wouldn't, I wouldn't be considered wrong to take those shortcuts, but for me. It wouldn't be right to do it like it's a principled thing. So, I think I could do things more efficiently, which would be to cut out a lot of the red tape. But it wouldn't be what I consider to be, to have integrity, I guess is like what I mean. Or and it's not something that I could stand for 20 years from now and be able to justify. Whereas if I do things properly, even though it takes longer, I feel confident that in the future, I could justify to the people who I studied or their descendants that that I had the correct permissions in place and that all of the checks and balances were done, and I did the best to protect them. So, I do think there are aspects of my process that aren't efficient. But important and so I wouldn't make those changes. Umm. And I know that people criticize me for them, right, because it creates a standard of practice that others have to achieve. But yeah, there's definitely ways that maybe that could be streamlined. I think, yeah, I think that would be the biggest component. Then once it starts, it's fairly efficient. You know it's about putting together a team of people who will get the job done. And I tend to work with follow-through people. So it's more that permission space can take, can take a year to a year and a half.
PS	Umm. OK. Yeah. OK. So that's great. And that feeds nicely into what we're talking about. So, you're saying the integrity of how you set-up your projects whilst it is, does carry a high admin burden and can take time means that the research that you present at the end of the day is, you know, transparent. You can be held accountable and your team around you can also be held accountable.
B	Yeah. And also, that we can feel comfortable. It's not just about accountability. I think it's also for us about, you know we work in, we work with the dead and the dead can't consent, so it is a really complicated space. You know, whereas when you do medical research, you have informed consent, it's a much simpler process. And there's a lot of legislative gaps in doing research on the dead. And a lot of people play off those gaps and so I yeah, I try to not do that. But I think that's also the difference in my space probably to other people you're gonna interview is like, you know, lack of (ability to) consent.
PS	Yes. So, you said legislative gaps, does that mean that those are the people who take loopholes, can do that completely legitimately?
B	It's legally it's completely legal. They're not doing anything illegal. But is it ethical?
PS	Gotcha. OK. I'm so when we think about knowledge in education and you've already sort of described your discipline as a social science, we think about the content of the knowledge. So, if you're for example, you're a physicist or a mathematician, you need to know equations and you need to know how to apply those equations. But in other disciplines, mainly in the social sciences, it's often more around how people behave their disposition and how they engage with others around them. So, it's about a knowledge or it's about a knower. How would you classify your discipline?
B	Now I think that we would be, I think just the nature of anthropology, because we're both we're both scientists and we're social. I think you need both. So, there is a set of knowledge and principles that are standard in our field that everybody would be expected to be able to implement. But I also know a lot of biological anthropologists that don't collaborate well with others and people don't wanna work with them and they're not engaged scholars. Umm. Whereas I think well, if I think about my own practice, when I approach people, they're quite willing to work with me because they know that I do good work and they also know that I'll follow through, but also that, and I've had people say to me, well, you know, why did you get involved in this? Well because Brook asked. You know, so I do think there's a little bit of both. I

	think in this discipline we have to be both. You have to be a person, personable. But also have a core set of knowledge.
PS	OK, excellent. And in education speak what we call that is an elite specialisation code where you have to have the knowledge and you have to be able to apply it in a way that the people around you feel is appropriate. So, you have to have the right behaviours and dispositions.
B	And I do also think we communicate a lot with communities. So, it's also about translation. So, we have to do a lot of, you know, not big speak if you know what I mean. It's about. Talking to people like I was in a meeting with police officers, and I could use a lot of technical words, or I could just say to them, basically your teeth can tell us where you were born. (Chuckles) You know, it's so it's just about translation. So, there's also that component to it.
PS	Right. I, understanding your audience and speaking to them like that. Great. So, do you feel? Sitting here today like you are a legitimate authority in your discipline?
	I still feel emerging.
	I think that I'm getting there like I'm closer there today than I was two years ago. You know, I think I'm. I'm moving in the right direction. But I also I look at some of my colleagues who I work like I collaborate with who are what you would call knowledge experts. I'm getting a reputation for the discipline.
B	So, they're really specialized, and they know every little intricate detail about that thing. I don't feel I'm there on anything. Like I, I feel like I could learn a lot still in lots of areas. And so, for that, and I may never get there, I've acknowledged that, and I also am celebrating my diversity. Because I like I find it feeds my curiosity and other things, but I don't believe I'll necessarily ever be that person. However, I do see that I'm moving in a direction where people are reaching out to me internationally, and they're hearing about me. So, I know that...
PS	And do you think that that's because you like to have this interdisciplinary "dip your toes and all the swimming pools?"
B	Umm, I think partly it's time you know, the more you publish, the people start to hear about you. And then also I have a few core connections that I think have led to other core connections in a. So, I think part of its luck as well if I'm honest (both chuckle). Umm, I don't think it's necessary. The dip in the toe in lots of things because I think in each of those spaces, I'm becoming known but for different reasons.
PS	OK, alright. So, if you were to feel like a legitimate authority, what would that look like?
B	I feel like that would look like having no impostor syndrome at all. I think that there's just, part of me that always thinks that I don't know as much as I should know. And so, I guess it comes back to what your earlier question right is where I could focus maybe two years on a particular topic and really focus all my energy to read all of the new literature on that subject and have the time to engage that in that way. That would feel like establishment to me. I think time is my challenge.
PS	We're gonna move slightly into your island shortly, but how do you, as Brook the person, not the researcher? How does Brook engage with her researcher identity?
B	So in my personal life, like I'm the kind of person who doesn't, doesn't wanna talk to any of my neighbours, or let any of my neighbours know what I do for a living, I don't, I. On the outside of my research world, I like to just be a human being. Umm. And so, then I look in on myself. So, if I'm in that space and I look in on myself as the researcher, I think that I am sometimes take on too many things at one time. But when I do produce work that the work is of good quality. However, if I was like a family member looking, in on me as a researcher, I would think that I could have better balance. And you know that there, yeah, I think that would be. If I was to look is that, am I interpreting that question correctly like you want me to reflect on myself as a researcher from the outside?
PS	Yeah. So, I mean the bland question I have on my list is how does your personal identity engage with your disciplinary researcher identity so?
B	An avoidance, I so the answer to that is absolute avoidance. So, like when I come home, although I'm working from home today, I'm I work outside and then when I go into my home, I try not to answer e-mail. I try not to do any kind of interaction in my personal life, and I try to like people will say to me, oh, you should read that murder mystery. And it's like I get enough murder my work. Thanks. So, try to do a lot of things that complete dissociate from my constant bombardment. So, I try to read, like really cheesy nonfiction and watch movies and run, and. I have, like, a very adventurous based physical interest. So, like scuba dive and snorkel. So, kind of like a complete severing of these two worlds.
PS	OK, alright. So, there's a separation and that's fine if that works for you, then you know I'm not here to judge. I'm just here to ask.

B	Yeah. So, I do think sometimes people see me as one thing and then they're like, wow, I didn't know there was, like, this whole other you and I do, you know, that is something that maybe is a bit bipolar, but it helps me cope with the whole, yeah. Work life balance which, yeah.
PS	Great. OK. So ... your map. Take me through your process. Take me on a tour of your island.
B	OK, so I decided that at first, I had my island with a village in it. That had many villages in it because I recognized that 'village' for me was a place of personal and family time eating sort of nourishment subsistence. But then in every village, I would want to incorporate other like-minded village members which from other villages in my island. So, then I decided my villages are off island.
	That my island is actually essentially my research space.
	And that other people from their other villages will meet me on my Island where we come together in this research space. So, I decided that because it was too crowded. And so, I decided that I would leave my village and go to my island every day and meet others in my island.
	So that's so there has to be a place to eat on my island, which I've realized I didn't incorporate, which I'm gonna just make some notes for myself. And also, I didn't find a place to write in my research space, which I think is pretty reflective of how I live my life, to be honest.
	Because when I go to work, I often barely find time to go to the bathroom or eat or drink, and I struggle to find time to write between teaching and actually doing research. So, I think it is actually quite an honest reflection of my situation. So, on my island I want you... First of all, the first task was to create some words that are important in my research process. So, for me that was contemplation, exploration, curiosity.
	But there's also a part of it that's just interesting, focus, drive and then a space to bring things together. And so, when I when I started to do that contemplation for me often takes place, you know, it's a high-level problem. So, I thought my hill should be called contemplation where you would go, and you would just sit and try to bring everything together.
	So, for me, contemplation hill if now I think about where would I eat? That's where I would eat because I would contemplate while I'm eating or contemplate while I'm walking to the top of the hill. So, I'm gonna put eating on there. I'm adding it in, into my space.
	And in terms of exploration, I often feel like when you're in the research process and you're collecting data, it's kind of a little messy, but super interesting. So that's why I called it the jungle.
	So, I put a jungle and in in then also for me sandy areas beaches with ocean coming in and out are also spaces for contemplation but also for more the physical activity and break that allow for contemplation. So, I put that around the edges and. I actually created a cove on my island where it's like the best place for surfing. So that I could have lots of physical activity that then I could be honest with my research because yeah, it comes things come to me when I am like, unplug from my computer.
	I also created an area that is like rough and rocky with cliffs and that's where the caves were. And that's like a curious space. So, it's, it's difficult, it's choppy, but beautiful at the same time. So and so that kind of spoke to my exploration component. And then of course I wrote about my village. I put that in there and so I've decided my villages were off island. I'm not thinking about non-family. I'm just thinking that the villages where you go to sustain you off island, so I just put it a bit off island originally like I said had it on island but moved it off.
	And then also for me, the entire island was kind of a sharing space. Which I think really embodies how I do research I like sitting, listening to other perspectives and share ideas and bring things together. Which is why I said other villagers who are like-minded would come to my island instead of having my village on the island. And so, my entire island is called the sharing circle. So, and then it was only after my writing that that I realized I didn't have any place to write or eat. Well eat I only realized now so, yeah, I think that's I still haven't figured out a place to write on the island.
	But I would have to put a research hut somewhere because in order for me to write, I need to not be too disrupted. So, if I was sitting on a beach, I would never write because of the beach is far too tempting. So, we need to be in a closed space for that.
PS	That's a really a really thoughtful island that you've reflected on and developed. And a great tour as well. And it's interesting to see you reflect as you go through the explanation as well. Um so I you, you have said already that you know you have this absolute kind of brick wall between researcher Brook and at home, Brook. So, I was interested to see that your family and your friends who sustain you, are off on a different island.
B	Yes, so but that makes sense now that you see my answer to the to the other component, yeah.
PS	It does. I'm curious how you how you travel between these islands. Is there a bridge or do you have to take a boat?
B	In my heart I take a boat, definitely boat.

PS	OK. And then so where was that question to you? So, you said, so you've got your island which is called the sharing circle and it's a place of exploration and curiosity. Umm, to immerse yourself in the landscape and understand how it feels and what it was like. So, when you're immersing yourself in the research context, what kind of values underpin that immersion?
B	I'm unconventional in that way, right? So, a lot of people in my space, we just tend to work in labs with bones and you know, that's the context. And then we rely on all these, this literature that was mainly written by white people, white men in the past. And one of the things that I really struggle with is trying to take the information that's factual from those documents because there is some fact in there, but leave out some of the unconscious bias or conscious bias that comes in. And then try to read from the dead themselves, the stories they want to tell and try to bring, be a bridge for all of these different things.
	So, when so for example, I'm working with some skeletal remains in the Karoo and a lot of the information and historical documents are all written colonial. But the remains are telling this really interesting story of subjugation and pain and suffering, but also cultural revolution and like retention of cultural identities and the subjugated world. And no one's really talking about, and we don't have those perspectives.
	And then they talk about, people talk about marginal landscape, and this was not a great place to live and, only people who were rough and difficult and savages would live in this kind of area. And then when I go to these areas then I sit in the landscape and think about is this really marginal? Or do you just have to know, like you need an incredible amount of knowledge to survive here? Like the people who lived here weren't savages. These are people who are ingenious knew how to seek out areas of plenty and what seems marginal, is actually not. You just need a lot of knowledge.
	And also, then looking at other sources of data like geological data that show that it was wetter. And there are these archival records that talk about like herds of 15,000 springbok that aren't there today. So, we look at it, it seems really marginal, but wow, then you think about that in your mind and is a hunter-gatherer like, this is a land of plenty.
	So that's what I mean by immersion. It's sort of putting myself in their shoes at that time and in that context. And try to reflect on it from that perspective. But at the same time, listening to the bones. But also taking some facts from these different areas and try to remove some of the bias to see people in their own right. And so that's what I mean by that. I mean it's not... Sounds really fluffy. But like I just now spent two weeks in the Karoo and partly vacation, but partly just this immersion of trying to understand what it was like to live in this area? And survive in, no more than survive. Thrive like these people thrived there.
	And so that's what I mean by that is immersion and that's also comes in my island, right is like these spaces of contemplation is just trying to then bring all of these weird pieces of information together to tell a new story. A transformed story of the past.
PS	That's really meaningful and actually speaks to a number of values that are sort of similar to what we think about in research integrity, which we'll get to shortly. You've kind of already answered this, but so in your last sentence you said you're missing a place to write down your ideas and you are now thinking of a little hut maybe or something where you can. Umm. So, my question this morning when I read through it was would you reconfigure your island to have this location or is it something that since you've admitted it takes a back seat, there isn't really space for it? And then when you do sit down to start writing is that does that immersive sort of value that you've just spoken about? Does that also underpin your writing? Or is there a different approach?
B	No, I think. It's those immersion of ideas and it's also what I called Contemplation Hill. It's those moments actually where papers kind of write in my mind. And so, I then figure out where I wanna go with something and the angle I wanna take. And I'm able to almost just sit down and write it. And add references in after. And yeah, so that immersion is reading lots, you know. So, you have all of those components, but it's like how do I bring it together now and? I did add a writing hut because I do think that I am committed to writing, and I do write and then and I do. So, I have added a writing hut. I just think it's interesting in reflection. There was no place to eat or write. There's no toilet either, but at the same time in my world on an island just. You could just make plan, but the eating and writing thing and it is something that I reflect on in my work life as well. Now that I'm back in the office, as those are two things I'm struggling with. So that's interesting, but I have added it in because I want to be better. Yes.
PS	Right. But I mean also, to be able to tell these sort of transformative stories and these reflective, more kind of inclusive stories, you, you do have to be able to publish so, so it's important that that hut does exist somewhere on that island.
B	Research for the sake of research is selfish in my world because if you're doing research in only sharing it with yourself, then you're not contributing and giving back, and we're mostly all funded by the government. So, we should give back some way to society. So, for me, that is part of it.

PS	Great. OK. So, we're gonna swing around to research integrity now, and I'm wondering if your discipline or, if any of the disciplines you dip your toes into, have a code of conduct or a code of ethics that you should be following.
B	Technically no. But I would say so, for example, in the forensic space, I do think there is a component of chain of custody. So, with that chain of custody, but also justice, criminal justice, like everything should be aimed at criminal justice. And then in biological anthropology,
	it's mostly about Daubert's standards, like there's a lot of meeting certain criteria so that we can be positive of our results. There's a lot of quantification and accuracy and accuracy rates that we need to meet, and so we do what's called inter- and intra-observer error to make sure that how I collect data, is how you would collect data and, that are we're both collecting data and in acceptable range and to make sure our data is collected accurately. So, there is a proof of concept I think cross all of them that we have to employ and there's sort of like that standard level. I think that in our in our discipline there is a lot of gaps.
	So, for example, we have gaps in, especially in spaces like DNA and heritage. There's lots of rules and regulations around DNA on living people but not the dead. And so, there's there are these gaps in research integrity that I think are being played off of in the discipline. So, on one hand, no. On another hand there are some aspects that we'd be expected, like minimum standards.
PS	OK. Great. And what is your level personally of engagement with research integrity?
B	I think I am very engaged with research integrity. I have taken courses as you know. But I've taken courses on research integrity. I also and have been described by others as well, I have a very strong ethical and moral compass, which guides me and so that plays into my integrity. But also, I think that there are some things that I've learned through taking the research integrity course that I wasn't really aware that were marginal practices or ways of dealing with some of those marginal practices. But now I practice them all and also pass on that research integrity to my research group. So, we talk a lot about ethics and permissions and conflict of interest and social justice. And you know, even things like the state pays your salary. I say that all the time to my students. If you have NRF funding, you are being paid by the South African people. What are you doing for South Africa? So, I do think it's something that is now integral. So, I think in comparison to some people, I would be quite high research integrity, have high level of research integrity.
PS	Great. So, are you aware with the of the Singapore statement?
B	I am, yes.
PS	You are excellent. Umm. And you say a lot of this feeds into how you work with your collaborators and your students. Excellent.
B	(Nodding head)
PS	Ohm at the rest of the people who work in your discipline, apart from those who, you collaborate with and are supervising?
B	So I do find that some of the levels of practice in in our discipline, that isn't the case, and I tend to be the person that tries to challenge some of that.
	So, I can give a couple of examples. So, for one, at the moment there's a big movement around the world to CT scan bones and teeth. Now I'm not opposed to those things because I do see the research value, but I am opposed to sharing them Open Access because you can actually reconstruct an entire person from the skeleton, and you can 3D print a skeleton from a CT scan. And so, I do worry about some aspects of Open Access when it refers to human data, and in particular with ancient DNA. For example, like DNA code from ancient people being sold off to Big Pharma being made available to Big Pharma.
	Umm, I think that these are things that a lot of people in our discipline aren't talking about it. I've written papers on these kinds of gaps in our discipline, and I still find that a lot of people, now I've implemented things that UCT, because I'm in a position of power to do so, to ensure that we only allow research that meets these standards. But they're not standards that are generally accepted across the country, let alone internationally. And so, I can only control my space, but I can try to influence other spaces through research and publishing. So, I am trying to do that, but I would say that a lot of people in my discipline are not following that lead, and it does cause conflict. And people feel that they're doing what's right. Everybody's like that. So, and they wanna be blind to the gaps that are time consuming. So, there is there is that component and even with, you know racial identity and forensic cases. So, there's a lot of data coming out of the US showing that, if you with a skeleton say that the body is black or white, then the amount of resources that go into identifying that person vary. And I have I'm sitting on some data here which I've struggled to publish because people within the country are blocking getting it published. That show that the cases where we have no racial classification are more commonly identified than individuals

	that were classified as black or coloured, and so clearly this is institutional bias. And so, then there's this ethical argument should we be doing it? If by doing it, we automatically bias the amount of resources that go into identifying that person? And so, I've been trying to challenge some of those ideas in locally, which hasn't been popular among some of the established stalwarts of our discipline.
PS	Yeah. I mean as we know, as I know painfully. Sort of, changing practices and behaviours as a long-term process and sometimes the easiest thing to do is just for wait to wait for people to retire. And we get to, we get the new cohorts of, you know ethical researchers who behave with responsibility and integrity.
B	The problem is though, is that some of those people have trained cycles.
PS	OK. We're actually getting close to the end. I'm so you've talked about how important sort of responsible research practices and integrity are to your research. When you go to research integrity training, do you think it is more meaningful if we teach it in a generic, Singapore Statement kind of way, or if we try and embed it into a particular discipline?
B	So, I can answer that because I've done some training. So, the Singapore statement is interesting, but I found that I learned the most from the examples. So, the general relatable examples I think worked for me. So, for example there were a couple of times where you know should this person be referenced or not referenced? Or an author or acknowledged? and or what is the ethical thing to do in this situation? And who would you speak to?
	I found those examples really helpful, but I think one of the things that, came up when I took it was how I would answer could be different depending on the discipline. And so that my answer wouldn't necessarily be wrong, but it was wrong from the context of a different environment. And so, I do think that there could be some usefulness in. rather than having it multiple choice like, you could still have it multiple choice, but maybe explain your answer. Would be a way that would allow it. So, I do think those general things do work. I found them really effective, but I think that in a discipline specific way you wouldn't, you wouldn't get it wrong because you're right for your discipline.
	But I also found that knowing that I was wrong in another discipline thought-provoking. Because I also think it's that kind of component where those gaps, you know what we were talking about before as what is a gap in different spaces.
PS	OK, OK. That that's a very useful answer (chuckles). Part of the project is trying to figure out, we we've got a sort of a baseline for training parts of the project is to figure out how to take it to the next level. And do we do we do discipline-specific, or do we keep general and I'm in favour of general because I think you have a lot to learn from other disciplines.
B	I do think that we can improve practice across the board if we learn from other bases. And some people are much better at this than other people. Right. Like there are some disciplines that are super clued-up and others that are really way behind. So, it allows for that transformation, influence, I think.
PS	OK, influence is a good way of thinking about it. Thank you. OK. So that was my last formal question.
	[Break]
	That's great. Thank you so much and thank you for indulging in the creative process.
B	Yoh, I have to say, Paula, I had set aside some time this morning because you had said that. And then when I saw the island, I was like, oh my gosh, what does this mean? And. It didn't take long for me to get into it, though. I yeah, it's just that, yeah, it did make me think about a lot of things. So, it was good for me too. So in in a way I have to say that doing the reflection exercise or doing the exercise and then realizing wait, I have no place to write. And then in talking to you, I have no place to eat. It's funny because in the last like little while I've just come back from sabbatical, and I've been going into work, and I've been struggling to find time for those two things. Is like to be at my computer on days that I'm on campus, but also to find time to go to the bathroom and to eat and like, sustain. And it just you know, I actually lost 2 kilos in two weeks because I just couldn't find time to eat, so I couldn't be like 8 hours. And I'm like, I haven't eaten anything. I haven't had anything to drink, whatever. And it's so unhealthy. And I've been trying to reflect on, like, how I could deal with that. So, I've put like a lunch 1/2-hour lunch break in my diary for the whole year because I found that if people had like if I had a 30-minute, people would just book me, you'd just get booked all the time. Which is the problem with the digital diary? I didn't have before is that people didn't know when I was kinda free or not free. Now they can see, and they just book it. So, I did find that really helpful and I mean it was something I was aware of, but it was interesting that when I set-up this research base, I thought about everything except for these two really important things that, you know, make us human. So, I do think that it's yeah. It made me think about that. So, I really appreciated it. And it's also a reflection of like I said, like my diary recently, I hadn't thought about that. I set-up research time, teaching time, but no time to eat or drink or whatever. So yeah, so I just, yeah. It was really interesting for me as well.

D2: Jean

German Studies

Speaker	Text
Paula Saner (PS, researcher)	The very first question is: you've got a qualification in German studies, and you are still working in this discipline?
Jean (J, participant)	Yes
PS	And what is your current involvement in any research projects?
J	So, at the moment I'm involved in a collaborative project with colleagues from...
	Well, actually, I'll tell you the story. So, I went to a conference for German studies earlier this year. And of course, though I have a qualification in German, I am South African and that can be, I suppose, a little difficult in this field because a lot of people are German mother-tongue speakers teaching German, so they have that more like, I don't know, the embodiment of what it means to be German.
	Whereas for myself and then some of my colleagues in South Africa, we're South Africans who've learned German at a later stage. And so, we've actually kind of banded together, and said well, we all have this in common and it's actually quite nice to speak to others who have a similar experience. So now we're doing a research project together. Myself and researchers at [Institution 1], [Institution 2], [Institution 3] and the [Institution 4]. So, we're doing a collaborative project where we've done an online Google Classroom.
	So, it's like a virtual class excursion where all of our students get to speak to each other in German, get to know each other a little bit, and also to enhance their communicative competence, but also to have that feeling of, German's a really small discipline like at the moment, in my first-year class only it has 12 people in it. So, I think you can feel quite isolated, so to be part of a bigger group.
	At the moment I've been focusing on publishing research that's based on my PhD. I've also just had my performance review and that was one of the things that I talked about was that my focus has still been on publishing research based on the PhD so that that gets out there and then moving on to new research projects. And so, I have an abstract in for a paper I published one paper in December from my PhD, and I have two more planned. So, I don't know if they're, they're not new research projects as per say, they're ones that I'm already, you know, it's kind of in and familiar with whereas the project with my colleagues is I would say new research.
PS	OK so, the collaboration, you've got this virtual classroom for everybody, what part of that is research?
J	So, the part of it that will be research is the method itself, the didactics. We going to present at a workshop, which is for teachers, in October. And the point of that will be, I suppose, the experience of also setting it up, the kind of nuts and bolts of it. How well does it work?
	We don't have ethics approval for our students as participants, so we won't be putting forward student evaluations and that kind of a thing. It will be more from our perspective as teachers as lecturers. So, the aspect of the research is from our side, rather than the students. And again, because otherwise it's quite wieldy to try and apply [for ethics] across five different universities for something like that takes time.
	So, as we know, also barriers to research can also be when you try to do things fairly and ethically and follow all the structures which are in place, of course those things are important but can also mean that you don't do certain sets of research because they're complicated. Umm, I think in the humanities that's true, often.
	Whereas what's nice about my PhD research is obviously that was all done, and I have all of my, you know, qualitative data and things that were collected and I can report on that from students' perspectives. So that was a lot of also like my students' experiences of blended learning and doing things in online mode actually before COVID. It was interesting. I started that project before COVID and then all of a sudden COVID happened then was like ohh, well that's interesting. All these things that have read about theoretically, actually just materialized and came into being.
P	Do you think you were better prepared then when COVID hit?
J	Definitely, and my colleagues at [Institution 3], because we've been having these conversations and they'd been part of my research. I mean, exactly how does research always work? Are you researching them or is it feeding into that? Or is it that they do the thing and then you report, it's a weird kind of paired experience. But anyway, I think we were much better prepared. They'd actually gone... so at [Institution 3] way before COVID, to doing one online lecture a week to replace the physical lecture before COVID happened.

PS	So, it was easier for you to pivot then.
J	Ohh yeah, than some others, yeah.
PS	OK. So, then you said, so you're busy publishing stuff out of your PhD, and then you're going to start on some new stuff. Apart from the collaboration that you've got, what does the new stuff hold for you?
J	So, I would like to actually move away from just qualitative research with my students. What I would like to do is a more, so like a step-back study. So, looking at teaching and learning collocations. So, collocations are patterns in language which are frequent. And for language teaching, my research has kind of been two-pronged. So, I have a background in linguistics, but also in German Studies, and I've kind of brought my applied linguistics background into this discipline [German Studies]. Most people who end up in German Studies study literature, and they are literary scholars. I'm not a literary scholar. I'm in applied linguist. So, what I've done kind of over my valleys/peaks (looking at map) is develop kind of my own identity as an applied linguistics German researcher. So, I looked at our learners' writing, for example in big corpora, and the kinds of collocations they themselves were using for academic writing and how they're different to how mother-tongue writers write, was like my honours level. Alongside actually ended up doing 2 theses at honours level. I did one in Linguistics and one in German because I couldn't really decide. So, I was like, why not just do both? So, I did like a whole project in reading in isiXhosa and developing reading strategies. That was like a whole other thing. And I still have maybe a I have like, a little circle here for, like, Ling[ui]stics reading research, because that's still like, a little area on my island that I like to go to sometimes. But mostly I hang out in Collocations Cove. And at the moment, so we talked about the Bay of Blended Learning and all that goes on there. But I hang out and Collocations Cove because I'm interested in corpus-based research and in developing, teaching, and learning materials. And that's traditionally been seen as, almost, a less prestigious avenue of research for German Studies researchers, but now is, I would say, becoming less taboo or less looked down upon.
	It's quite interesting I did my research at [Institution 3], and I published everything; I wrote my research and I published in English. Also, because I'm an applied linguist, I'm looking at German as a research artifact, not as a literary scholar would. So those people tend to write their research in German and for a German audience. Whereas I'm writing in English about German. But really my audience is other people like me who teach and learn German. So, I've kind of oriented myself with, I like to call them... there's like all these red headed women across the world who study German as foreign language. I know it's weird because you actually end up Googling the people that you read a lot and then at one point, I was like, they're all red heads. I should dye my hair, you know... But researchers in America and Poland and other areas where they teach German as a foreign language and also research how best to do so. So, I'm doing research and how to teach and learn, so its vocabulary really, it falls into teaching and learning vocabulary. One aspect of that is word patterns that go frequently together, and the ones that are different in German compared to the ones that are in English are the ones where students most likely make mistakes. There's not that many resources, though, so researchers on the one hand... So, like in linguistics are like, ohh corpus-based things like the new, it's so cutting edge, well since the 1980s. People should do corpus-based stuff, you shouldn't teach concepts to students, like you shouldn't teach a grammatical concept. They should go and research the language and basically inform themselves and come up with that kind of implicit[ly]. Yeah, so, we shouldn't do the present, practice, produce model. We should do discovery learning. Which cool? If you're researcher and like, you know, working with just postgrads, but when you're an actual lecturer and teacher, you don't have the time for that in class. Like let's students discover grammatical patterns on their own. Sure. I mean, I don't know if you studied Latin and Greek? You know, kind of like reading the texts and trying to work out the grammar for yourself. And like, you know. How does the dative work?
	Well, it's actually kind of helpful I think for our students in the time constraints to give them an idea of what that means. But I do see the value in the kind of giving students real world examples and having data which supports that. But I do think that they need some like level of mediation. You can't just let students lose at raw data... sure maybe in a postgrad course? But not at undergraduate level, so the kind of midway is developing resources that are paper based, corpus-based resources for teachers and that's where I'm at in collocations cove. We're on my map. I live at UCT, I used to live at [Institution 3], that's where I started out. And I started exploring in the mountains and seeing over the marshes of uncertainty.
PS	OK. You know you're gonna take me on a tour of your island later.
J	But I feel like I'm on, I get on my boat and then I go and hang out.
PS	So, it's important that there are boats on your island?
J	Ohh yeah, you need to travel around or walk, boating might be quicker. I don't know.

PS	OK, so you sit across disciplines in linguistics and in German studies; so, pick one of your disciplines. What is the traditional approach to how to conduct research? You already said that the linguists like this corpus-based approach. How did the Germans do it?
J	So, I would say well, German literary scholars go to literature, which exists, out there. And they go deep into a text, and they do textual analysis, right? With literary theories that they use and apply to interpreting literary texts, or perhaps comparing, you know, comparative literature, doing a comparison of one text to another. And then of course, looking at things which may have influenced texts at that time. So, what was the history? What was that author's own background or biography? I suppose those are different lenses that you would apply to literary interpretation. But I don't do much of that.
	What I do do is kind of in the linguistics field. So, there are different ways of doing that as well. So, corpus linguists like to collect large bodies of texts and they like to look at things like frequency and they like to use the language which exists there and describe it. So, they're descriptivists rather than prescriptivists who prescribe the grammar. [Prescriptivists] come up with rules based on a common-sense notion of while I'm a, you know, mother-tongue, speaker of this language level, this is what I think the rules are like. Descriptive linguists like to describe what the language is like and say, well, that's what should describe our kind of rules. And also think about that as we are coming into language teaching and it's quite a tricky field because you want to teach your students a standard version of language because that is of use to them. It contains, it holds power. If they can speak a standard version and be able to communicate, write emails, whatever, but that's not how people actually speak German, really. People have, loads of dialects and, you know, speak with slang. So, the kind of language that we are teaching them isn't really the same as the language which is out there. That's okay there is a bit of tension there. And so, what I like to orientate myself towards is those who say, well, we need to just acknowledge that teaching language is pretty artificial. It's not an authentic situation, not by any means. It's a pretty artificial environment and we should also make the students aware that that is an artificial, that we are in this environment and that the language that they see, and they textbook might not be language as it's out there.
	And that informs, I think, how I approach my research as well is, trying to bridge that gap to make the point of my research, I would say, why I have a teaching and lecturing garden is because for me, the point of the research that I do is to feed into the teaching that I do. And so, I think for a lot of German scholars that's the same. They research literature and they teach literature. That's not my focus in teaching. That's not the main part of my job here, because my other colleagues really love that, and are really great at that. So, my focus here would be more the language side of teaching. And so, for me, it's important that my lecturing of German is underpinned also and fed by my research, whereas I don't think that's the case all over.
PS	Do you agree or disagree with this?
J	It's an interesting one Paula! So, I think studying 'teaching and learning' as a phenomenon, so studying social phenomenon is quite different to studying science phenomenon. Studying teaching is quite difficult because people aren't like plants.
	You can't say, right? I've got an experiment and I'm going to take half of my class and I'm going to give half of the class this treatment and then I'm going to take the other half of the class and give them this different treatment and then I'm going to see which method was best. Teaching is not like that. And that would be really weirdly unethical, I think. You know treating your students like plants, even though I have them as plants on my map.
PS	Those are metaphorical plants.
J	Metaphorical! So, I would say that that's something that I really struggled with, also during my PhD was how do we research social phenomenon in a way that you can accurately come out and say something about the research that you're doing on teaching and learning with human live participants. And about the methods themselves. When everything's really embedded with one another.

	And there's so many things that play that aren't just the specific like materials that you produce. For example, there's: How are you on the day? Are you depressed? Do you present as a happy teacher? How are your students feeling? Did they just have something bad that happened? Was it a protest on campus about sexual violence? And they've all come in and they're, like, completely distracted and you're trying to do your research on a specific method of teaching collocations and actually it went really badly. But actually, it had nothing to do with the method itself. So, students are really complicated. Well, human participants are complicated, because it's really hard to pull apart the different aspects of what you're trying to do. So, what it did in my research, was I looked to other theories that tried to be more holistic and used like metatheory to pack my smaller theories into. So, there's a woman called Diane Larsen Freeman who uses complexity theory, which comes from the sciences. And matches that to social phenomenon like language teaching. That was very helpful.
	So, I drew like beautiful, interconnected diagrams where you try not to just see one thing in isolation, but to see it as it relates to everything else and use different methods to reflect different aspects and try to almost compare them off against each other. So, I did look at student evaluations for example. I did look at the actual writing that they produced. For example, I looked at how they improved over time or didn't. And I looked at my own reflections and my own notes. I looked at my colleagues and my interviews that I did with them, and I tried to build a more holistic, complex, rather than just empirical, kind of...
PS	Yeah. In the sciences and the Health Sciences, they generally have positivist approach. You go out there, you seek a single truth, and you, as the researcher, can see that single truth with your eyes because you have developed the appropriate gaze, or whatever the case may be. Whereas with many social sciences and humanities there are different approaches, different paradigms. So, you could go for an interpretive paradigm where you take your data, and you interpret what's going on. Or what you've described is fairly similar to what I've heard as social realism.
J	Yes, so well done, nice and yes and yes, I would say I think I'm probably in a social realist framework although I don't think I went as deeply into that. I have a colleague who's also doing a PhD at the same time as me and she went like deep dive into social and critical realism, the two and very interesting. I don't think that I went as deep into that, but I probably said it would be aligned with that.
PS	Excellent. OK. Thank you for that. When we think about disciplines, in education, so, we're thinking very generically, we think about disciplines that value epistemic relations. So, knowledge, like many of the sciences, physics, maths, you have to know the equations, you have to know how to apply them. Or we think about people who have cultivated the correct dispositions and behaviours and attitudes or the right way of knowing. So, you have knowledge code, or you have a knower code, where do you think you sit? Where do you think German literature or language teaching sits?
J	I think it's more about the knowing than the knower, maybe. It could be both, it might be both. We are interested in the knowers, very interested in students and how they learn. But also, in the knowledge itself.
PS	So, what's more important? Epistemic relations, knowledge, or social relations?
J	We have a foot in both camps.
PS	Which makes sense because to learn a language you have to learn the building blocks, the grammar, the vocabulary.
J	Absolutely. And I say in my research I do some of both. I do. I like the kind of linguistic approach to the language itself and what it you know, it's like describing what is out there and how it is. And that's quite different now the way that we do that to how it was done before. But as well about the teaching and learning; about how we are teaching and how the students are learning and how they are receiving it? I think it's both. I think my research also is on both. I don't know what literary scholars would say.
PS	I've always pegged the Classicists.... I think I think about this a lot... As more leaning towards the social, so more leaning towards being knowers as opposed to preferring the knowledge just because, by doing the qualification, by getting the degree, you're becoming accustomed to a certain way of knowing things to a certain way of doing things. And that is in many ways more important than the knowledge that you gain along the way. And that is how I have always thought about the Classicists.
J	And Humanities, I think is generally more like that, isn't it? We're teaching people about how to think and how to be critical thinkers. And I think that's also, yeah, that's the point of a foreign language, is it? It's about how you learn a foreign language and trying to add. We always think about like transferable skills. So, like what do our students walk away afterwards with? Because you could learn German by, you know, self-study. Sure, you could go live there, and you probably pick up just as much as you did in the university language course. Like what is the point of this subject? Yeah.
PS	Too many philosophical questions.

J	Yes, but they are important, I think, to think about because otherwise, you know. Why am I here and what am I doing? And what is the point of this as a university degree? And then that definitely would be about we're teaching people how to think and how to be critical and how to take a textbook and not take it at face value and think about: who created it? What are they trying to put across? What does it mean to be a German? What is the German language anyway? Is this version that we're learning and what German is? No, there are many dialects, many forms. This is a prestigious variety that we're learning because we'd like to get a job someday. Are Germans only people who are heterosexual and never talk about taboo subjects? No, but that's what the textbook's like. (Chuckles) And I don't think people ever really bothered about that before so much. I think we're becoming more and more like critical in our own discipline. You know, it's like the big transformation delays and those kind of things that are happening about. It's very important to also pick up that stuff and make students aware of that. So, I think when I go, when we go to these conferences now, we actually got almost divided into 2 streams. So, at the latest German conference between the literary people and the didactics people, it's almost split off into two camps. Which is very interesting. And I think that's the way the discipline is going. Yeah. And that's not just in South Africa, that's worldwide. I would say, from the reading that I've done, So, like in the UK, they have the same thing. So, like people come to university to study German because they want to learn German nowadays. Beforehand people used to learn German at school or, you know, speak it at home and they've come to university and do basically a course in German literature. Not a course in German language acquisition. But now people don't do that at school. So now we're coming with a different. A different set of first years we want to go through the whole system. You want to get their language skills up to scratch really quickly, so that they can engage with the German literature and all of that, by third year. And at the same time, you don't just want it to be a language acquisition course from the first year. Other like, important things.
PS	OK, interesting. So, do you feel like someone who is a legitimate knower in your discipline like an authority?
J	I think I've come to feel like that. I think I started feeling very much like an impostor. Umm, for the fact of not being a German. So not starting out as a person with kind of inherent knowledge about the subject and how it is. Whereas I feel like some of my German colleagues just embody that just by being, they are German. Therefore, you know, surely, they know everything about all the things just by, you know, inherent value of being a German person. So that background I think is quite interesting and different and difficult. And then of course. Being in a field of my discipline which is less valued, so that didactics kind of part, which is not what most of your kind of highflyer researchers are researching. This is kind of like, your baby-sister research field. But I think through the process going through the steps, going through my postgraduate degrees, presenting on the research, attending conferences with other people in that and kind of seeing what else is out there and how others approach things and what they're doing. I definitely do feel like I now have a sense of legitimacy in my own right. My supervisor was also very supportive, and she actually gave a talk at one of our seminars that we organize the UCT in the online field where, and she talked about all the research that she supervises, and she is, in English, and obviously also talked about my research. And that was a big moment for me was also, where somebody else validated my researcher identity, in a public space. Of course, having a job as an employed lecturer for my subject, where I've gone through a selection committee and people have asked me about my research. And I had to do a teaching presentation here and do the things, that's also legitimizing. I go, oh, these people have really looked through my credentials and they think I'm good enough to do this job. Therefore, I must be. So, I would say for myself is that kind of external validity that comes as well. So, with publishing research with going through peer review with having other people put those kind of marks on. You are a lecturer, you are now a published researcher you may now teach our honour students a course in... And this is a big thing, right? UCT only offers in German Studies courses that are literary based. But now I'm employed here. And I don't research literature. So now we've actually had to change and adapt our honours programme because. Because that's my skill. So now we will have a module that's specifically for, we don't have any honours students this year, but next year we have three. And now I will teach module to students about the things that I research; applied linguistics as it pertains to German Studies. I will take my students on the boat with me to Collocations Cove. We will hang out there. And so that is also I think, sort of legitimizing.
PS	So, the, the mentoring or the supervisor of future generations?
J	Yes, and that's not something that I've done yet. I have never supervised a student. It's something that I look forward to doing. I've only ever received supervision, but never actually you know, have brought a little postgrad student to fruition. Umm but yeah, yeah, I hope to, so.
PS	That's exciting. Three whole students, that's very exciting.

J	I know, I know. And again, will they be allowed to write their long essays in English, or will there have to do them in German? My colleague is very much for that they have to do them in German. But they're coming from other universities and is their language good enough for that? I think they should be allowed to choose whether they write their research in German or English about German. If you study African languages in Germany, you would write it in German, you wouldn't write it in isiXhosa.
PS	Yes, I suppose that also depends on what they want to research.
J	Exactly. Exactly it does depend. And what their end goals are, and do they want to go to Germany and do their Master's there? Well, in that case, they probably should write their thesis in German. Do they want to stay here and pursue another kind of career? Well, then they could do it in English. But it depends, I think.
PS	OK, so you feel like you started out slight impostor syndrome, but you have grown into having some legitimacy and authority through...
J	Yes, through engaging specifically with other colleagues in the discipline. And let me say Paula, it is terrifying, all of this, my job happens now in German. I only, we do meetings, emails, everything in German. When I go to a conference, it is in German. When we have a seminar, you know, just like these normal things. You're operating in a foreign language. That's another layer of like (whispers) I feel like an imposter. If I make a grammatical mistake here, obviously you are going to be seen as "not quite there yet". Even if my theoretical knowledge is very sound. My performed identity has to be in a foreign language, and so I can really get, also our colleagues who come and don't speak English a first language, you know? Yeah. And have to operate in English at this university. It's quite hectic. So, I think overcoming that's been a bigger part than just overcoming, like is my research and my understanding of the knowledge of the discipline and how good of a knower or not I am, is this that? Is that in question? It's not. Its part of it.
P	OK. So how does your personal identity, when you're at home on the weekends or whatever it is, engage with your disciplinary identity? Are they aligned? Is there a brick wall between them?
J	Ooh. That's interesting. No, there's not a brick wall between them. I think the things that I am interested in and like to do, I try to read German literature in my own time. I try to I would say I'm interested in, I try to keep abreast of the things that are happening for German learning. So, like Duolingo for example, my partner now, doesn't speak German, so now he's like, maybe I'll dabble. So, like he does like the Duolingo and then I'm like, ohh, what's happening on that app? What are they using like, what are their strategies for teaching? Yeah, I think they do overlap. I think, I also, sometimes feel as though have a bit of German fatigue and then you know, I like gardening and hiking and sometimes just take a complete break away. I think that's also important. But I also socialize with, and have, like my best friend in [town where institution 3 is located] was my colleague who also teaches German. Obviously, what we talked about when we get together like work, you know and how it is and now you know, yeah, we're doing this project together and collaborating. So, I think, I mean, yeah, it's not like that's divorced from my private life. And I think in many ways your job informs your identity. And so, this job is, you know, teaching and research and so that that identity of yours is also very much linked into what you do in your free time. The types of things you choose to read that. Yeah, types of conversations that you have with people.
PS	Some people keep brick wall between themselves and their work. Interesting. Yeah. But you know what? Whatever works for you. So, let's look at your map. So, take me on a tour of your island, please.
J	OK, well, I've. I've already taken you around a bit. I live here (pointing to UCT). My institutional home on the island. And I think that when we talked about, like, legitimacy is a big thing because as a researcher, your identity is linked also to your institutional identity. I couldn't call myself, could I? Are you legitimately a German researcher? If you're not linked to an institution? I don't know. For me it's like this is a core component of like our job and our identity as like our employment identity? It's not just an aspect of my identity that I would have if this were not... If my job was a high school teacher of German. For example, umm then that would not be. Then this would not be part of it. Then all the language things that I do would still be there, but not the research things. So, my job is, I mean all of ours as lecturers is, its teaching, but it's also research. And for me, those two things feel like they're very much hand in hand. Yeah, they're linked together. They're not separate for me. I think that's important. Maybe that's just the person that I am.
PS	So, Bernstein who's a sociology of education chap. He described something called the pedagogic device, which nicely marries what you're talking about. And it talks about the field of knowledge production, which is research. And then followed on from that, is the field of recontextualization. Which is kind of what you do in your office and then the field of reproduction, which is the teaching and learning space.
J	Cool.

PS	So, they are very much interlinked. If you think about it in education terms, yes, because you produce the knowledge and then part of your job as a lecturer is to recontextualise make it relevant and then help others to reproduce it. Yeah. So, it is nicely linked.
J	I remember sitting in one conversation about Bernstein, which, yes, now you're bringing it all back to me there's a whole diagram.
PS	It's a nice little diagram. It's only got three blocks on it.
J	It is nice. And so, yeah, for me to have my institutional home and my teaching and lecturing garden. And for me, like all of this (gesturing to the whole island) helps this. My island experience. All the explorations here. Help me here. But I don't sit at my desk the whole time, I go off exploring. And so, what I had on this side was just like some structures (left of island) that help you, because for me, to get through all of this (mountains/peaks etc). So, it became lonelier and lonelier as you climbed each little hill. You start off at undergrad, you are with a whole class of people and you're doing broad knowledge. And as you go up and you do an honours and then a masters and then PhD, it gets super lonely. Well, for me anyway, like the only German master's student and then at PhD level I luckily had my colleague who was also doing that. So, I had a little bit of a friend, but the kind of like the hills that you're on the like mountains that you'll climb, you definitely kind of doing that by yourself, with a mentor who's your supervisor. And you, yeah, gain some perspective while you're there. And then you come back and it's just really weird. I don't know. Postgraduate studies are this really, really weird thing because you go into this deep dive into this really specific area that you become really, really knowledgeable about. And then the more you learn the, the more you realize that you have no idea about. And for me, one of the most important things we also talked about being legitimate was getting back your reviews of your manuscripts by external examiners and what they say because, you're with your supervisor and they know you super well. And they tell you all the time. It's cool, what you've done here is nice, but also change this paragraph? But that external validation is really important. Somebody read my research and came back and said, you know, this was really a fabulous section, and you should publish this chapter. OK, cool, now I think I can. So as a centre of my research identity, I think I also probably put these (the hills/mountains/peaks) here purposefully at the middle. Because I'm right at the beginning and these are really important. The fact that I have completed my doctorate means that I probably got this job if I hadn't completed it, I wouldn't be in this job. Because you can, I think, begin as lecturer with an MA but it's difficult to, people only really take you seriously if you have a PhD. Cool. So, we did that, we climbed. And like, it's hard for everybody, I think. That's also a kind of universal part of doing your PhD is it's really challenging, like having a wieldy project that lasts over years, that you're just in control of and trying to navigate. All of that and then write it up in a way which is understandable for other people. Is this really weird thing? I think so anyway. So then like for me, I went a lot and visited structures. My supervisor at one stage was like you're gonna have a patchwork of a thesis. You need to just sit down and write stuff, [stop] going off to courses or writing retreats. But for myself, though, I find these sorts of things really helpful. So, the kind of structures that are in place as part of your institutional home that help you to navigate that process and make you not feel by yourself. So, I like to go to seminars and do courses and talk to other mentors. You know, not necessarily just your research supervisor. Other people who are experts in the field and colleagues who might be working on similar things. So, I found that also really helpful. And then of course, like your research offices and your Ethics Committee people, so you send off and, higher degrees committee. So, like, it's not like your research is also just like just the article at the end or just your thesis at the end. There's like many different little gatekeeping steps that go through and that really helps you to explore the island, go along the path. I don't know.
PS	Does it... So, these are these are physical in the metaphorical world, structures, right? Are they are they sort of the foundation of your mountains or are they separate to your mountains?
J	I don't know. That's interesting. Maybe the like bridges? Like each mountain and obviously is its own like little. It's not like it, just one path. For me also the help to peg out your journey and provide you with different steps along the way and give you know physical structure.
PS	So maybe they're like the base camps as you progress up the hill?
J	Yes, exactly. And of course, like applying for funding. OK. So, you apply for a grant and before you apply for a grant, you really have to think about the project first. And that's like when you do your PhD right, you have to have a proposal before you can actually do the PhD because you have to have a plan before you can start out, so maybe they are exactly like that. Base camps. You start out new, do the thing and then you journey on from there and then you stop at the next one you'll see like aiming for certain things. And like we all know, at the beginning, your plan might not look exactly like your end product was, but if you didn't have the plan to start with, you couldn't go anywhere.

PS	And you also wouldn't have been permitted entry to the National Park land that has the mountain.
J	Exactly because there are gatekeepers there for a reason. And again, through your institutional home, you can't just go there. You have to go through your institutional home where you are. I had my Port of Publications, which I like because you've got incoming and outgoing things and you're kind of in control of that, but not just you. I had my peer review office, call for publications notice board which sits there, and you actually have to go and look at, because if you don't, you'll miss it. And then you miss the ships going out. Right, and if you've missed that boat, shame you've missed it. Now you can't publish in that journal anymore. So, you really have to be on it. You have to go there quite often. And then yeah, you can't just ship something out. Well, you could, there are areas of the internet, where you could just ship things out, but they won't be taken seriously. You want to send them on the good boats, or they must go through your peer-review offices, cool. And then they go out and then you've got articles coming in. You're in control of that, too. So, the library is a structure. Because the University Library is also like, you know, when we go and we look for our articles and depending on what your university subscribes to, you will find it and if your university doesn't subscribe to shame. And obviously for German, there's a lot of that right. There's just a ton of stuff that we don't have access to, right? That's fine. My interlibrary loans librarian, and actually thanked her in my thesis because she was super great, and she would just like find things and get them for me. But you're also in charge to, like, finding research is one thing and then organizing it. And preparing the literature for yourself in a way that... I have the forest, and, in some arrows, which is like I don't know, wood piles? You can't see the wood for the trees. You need to prepare them somehow to make them usable to light your fire of research. Who knows? Let's extend that metaphor... You might have downloaded a whole lot of literature that sits in a beautiful folder, but did you really like? Have you been in there and like read it and made notes on it and engaged with it? No. So might just be in the forest forever. So, you kind of have to do something with it. It's kind of what I also had on. That's a big part of being a researcher is also like, sure, you've got the new articles come in and they go through the library, the going to your downloads folder and then then the forest and then in the wood pile and then like do they even make into? Do they make it into your publications, into your other areas? Yeah. And so, for me, that's. This is time consuming but super important and how you do that, I suppose affects your individual research identity. And in some ways, we're trained for that over like postgraduate research. I still think there's probably better ways to do it, but... You know, like simple things or structures to make it easier for yourself. Like getting notifications from Google Scholar or library websites or whatever that ping and go ooh a new article in your field. Because if you, if you don't keep up to date with the new stuff that's coming in. You also then fall out of date and are not so great, yeah. I find this quite stressful. Like I find it super interesting and useful as well, but I don't know about you, but like writing a literature review is awful.
PS	Oh, it's awful.
J	And you is kind of double question yourself and have I left something out? And you're always like, oh, what if someone else out there is doing exactly what I'm doing, and I just haven't found them yet? And then, like, that's half exciting and half terrifying. And at least in the humanities is not as bad as it's sciences because, like, they're not doing your exact same research. And you could probably collaborate, but anyway...
PS	OK, we've organised our reading into piles, and it'll end up either in publications or in teaching and learning. Where do we go from there?
J	Exactly? What do you mean from here? So here, I suppose it comes back to your desk and you need to sit at it, and then, ooof, we needed somewhere here also like and I suppose research office that would be like applying for grants (amends diagram). Big part. And doing the steps again, so going like every time. So, like these are like your big mountains that you did for big research, and I imagine like new research is also small hills. It's like a baby version of the same project. So, you have to then get up from your desk and you have to again like, trek out and do the thing and climb the hill and go through the base camps and climb the mountains, prepare a thing, go to the peer review offices. Wait. Ship it out. Phew, OK. And then you go off to conference islands.
PS	OK? Yeah. And what happens at Conference Island?
J	There you present on the things that you are working on here and exploring and doing and you have chats with other colleagues. So, you are again it's ...
PS	So, you share your whole island at Conference Island?

J	Yes. OK colleagues, collaboration, and like comparisons like what is everybody else doing? And then also get feedback, right? And then you come back to your island, you work, and then you can send things out. These were like the tides... (referring to the swirls on the diagram)
PS	I was wondering if there were tides or if they were like your boat leaving a little wake...
J	Yes. It's like your boats. And you're traveling and like, I don't know, just connectedness is what I was going for.
PS	OK, because you didn't. You weren't particularly enthralled with the metaphor of an individual island.
J	No, I didn't want to. Just like, yeah, it's my island. But you're not just yourself, really. Because like the whole process of doing research. You're kind of like driving the thing, but you can't do it without input from a whole lot of other structures and without mentorship and without being involved with other people. And certainly not my research, because it's often to do with other people and do it with participants. And like I did action research for my PhD. So, it was literally, you know, kind of these cycles of going through with people and they were, as you know, huge, big part of it. Yes. So, I wanted to be connected to, and I suppose, yeah, you've got your research identity island maybe. Are you going to show your island on other islands, but also other people over here? And that's why I had a pier of peer collaboration.
PS	I was tickled by the pier of peer collaboration
J	They come here in little boats. And then you meet up and you have, you know, a chance to say, hey, you know, this is what I'm doing here. And then should we do a thing? Yeah, I think so for me, anyway, my identity feels like it's shaped in comparison to the identities of others in my field. Maybe that's just how I am as a person, but I feel as though I kind of measure myself or match myself up against what others are doing. How they are navigating their islands.
PS	And what sorts of values or beliefs underpin what's happening on your island?
J	Well, I would say so it's like. Values, beliefs? My belief would be in like the value of teaching being for actual human beings, is that humanistic? Because my research, I feel should be for a purpose. So, I think that's maybe also personally, I think research should be there in a way to support the thing which I do, which is lecturing and to better or improve. I think I've always been personally about wanting to transform, improve, enhance the discipline which I'm in. Which is different from just reporting on what's there, which is also sometimes been very difficult. Because you have to know what's there in order to make it better.
PS	OK. And when you're teaching or lecturing, when you're engaging with these beautiful flower students, how do you engage with them? You're doing more than just, you know, giving them a list of things to learn?
J	It's being <i>fair</i> . Being compassionate, being organized, being on time and critical engagement with our subject and our actual contents. I suppose the language itself and the way in which it's taught, both. I want all my students to thrive.
PS	And does that translate, the fairness, the compassion, the critical engagement, does that also translate into your research work?
J	Definitely, I would say so. I always I think what underpins my research. So, when I looked at blended learning as well was not to just say: Hey, this is the biggest and brightest thing, so let's go for it. But to say, how would it work the best depending on the context in which we're in? I think teachers are very important so... Contextually based findings, I think that's what came out for me anyway, like it's the most important thing, so. Also providing maybe, not like universal truths. But providing like contextually based items of best practice. It's hard to kind of think exactly of what your values are, I don't know. Organized is that a value? Is being organised, a value I don't know?
PS	I mean I would regard it as a value for me. Because in being organized you are committing to a certain level of engagement with a particular thing, whether it's your pantry cupboard or your bookshelves, or the content in a book. So, organizing that ...
J	It's like methodical. Yeah, I inherited this office which came with, you know, mountains of books, mostly Italian, which I've now passed on. But again, you know, trying to take this inherited mountain of stuff and in some way make it your own and see what's relevant and go through it. Yeah. So, I would say both. Yeah, research-wise and then teaching-wise, let's say those both important.
PS	Because your students would not enjoy working with you if you were disorganised. If you arrived and didn't know what you were teaching on the day? They would very quickly drop out.

J	No, not at all. And I suppose I just value communication. So both in my research, I want to make things accessible to others. And that's the same with my teaching and my content I think making things understandable. And yeah, I like communication. I like to write research that is readable. Not just, you know, in high academic. Yeah. And those are the things I like to read as well. You know, I mean, just this such a difference in kind of engaging texts. But yeah, definitely also showing what is there, I think. I don't like reading studies where they never talk about the context of the teaching and learning. They're gonna talk about methods, but they don't talk about who their students are, what their hours are, what the classrooms look like, what access to technology they have, they just leave it all out and they present you with context-less empirical methodologies. Like for who? For what lecturer, teacher? For which type of students from what kinds of backgrounds? They completely present didactics as though they are science concepts, which they're not. Our students here are very different from students in the US or students in Germany.
PS	Or even as students at UCT and [Institution 3] are very different.
J	Ohh, they are. Yeah. And I think a lot then can be learned even when you do sort of very context-specific research that goes into all of that complexity, can be so useful because somebody else can read it and understand where that comes from. And then by analogy, say, well, these aspects might work really well for me in my context because these things are similar. And you know what other aspects might not or, I might do differently, then you can make good, informed choices? I think, so that's the research that I like to read, and that's the research I like to create which says, you know, these are all the parameters, this is the context. These are not perhaps universal constructs which could be applied everywhere, but these are the things that are useful here and I like useful things. I don't like, and it's not that I don't enjoy literature. I do, and I can see the value of it a lot. But I think when I was, younger especially I found it to lack real world consequence. So that's how ended up where I am.
PS	That's great though, because if it aligns with what you were saying, that your personal identity and your you at work are very well integrated and very well linked and so that is a theme that you carried through.
J	Yeah, I know. Well, I suppose from your first e-mail this is supposed to also underpin the research integrity courses or that's where you're going. Yeah, we haven't really talked about that.
PS	So that's the next batch of questions. So, I think I know the answer to this question, but I'm not going to assume. Does German, German Studies or linguistics. Is there a code of conduct or a code of ethics?
J	I don't think specifically. I mean. There's no code that I've seen for responsible conduct of research that's shared.
PS	That's a disciplinary specific code?
J	Yeah. And I think that's mostly because people research literature.
PS	And there's less. Not less consequence, I'm trying to say this in a fair way... You know, like classicists, we are researching people who died 2000 years ago...
J	And it's not if you say something about them, it ends up being wrong. Ohh well, you publish a new paper, and you say, hey, you know what? I found out some new things and actually maybe that was wrong. Yeah. It's not that immediacy of having real world consequence. And of course, the I would say, like humanities. Of course, when you go like through those ethics review processes there's I would say kind of guidelines which they want you to follow and think about when preparing your research and I found writing ethics applications also help me to think about, how will I interact with my participants? What is the nature of my role as both their lecturer and also researcher? How does this power dynamic work? How am I going to interact with them in a way that feels responsible? So that they don't feel like they're pressured into doing anything that they don't want to do, you know? I think researching your own students can be tricky. And so those processes I would say help with that make you think about participant relations. Publishing the research itself, I mean I had 300 pages of data. Which I had diligently typed up into Microsoft Word document tables and things and they went OK, now what? So, I put it into a Google Drive folder which then my examiners had links to. As like a last thing before the appendices on my thesis and, one examiner said I read your entire thesis only at the end to find that I could actually see all of the methodology that would have been so useful 200 pages ago. Like you need to put this right up front. And this is also so cool, because now you know that that data is available for everybody else, so you need to think about whether you can share that. Which led me to doing the Open Science Framework, which then I thought, OK, well, I can publish my questionnaire separately to the data itself. And then other people could use those research instruments. They have a stable DOI, it's not a Google Drive link that will expire. And then you know, you kind of think through all those things. And then when I published my first article from my thesis, then I was able to give a DOI link for both the questionnaires and the actual data itself, which was great. Whereas I think before you just

	wouldn't have included it, it's like way too much. I may have included the research instrument, but not the data itself, for example.
PS	Which leads us to our next question. So, you are talking about Open Science and Open Access and, some of which have contact with research integrity, although they all have challenges, but we won't be going into that. So, what is your level of engagement with research integrity with those values and the Singapore statement that we think about?
J	Yeah, I think. It was interesting going through the course because I think I'm starting out and I'm so early that a lot of the things yet haven't had that much bearing on my life but may do in the future. I want things to be open and accessible. When I do my research now, I think about how will I store the data, how will it be accessed by other people, anonymity. You know, having the right procedures in place and that I think that has always been important. But now it's, you know, specifically very, very much so.
PS	There's the scale of research integrity where we have fantastic responsible practices, open science, etcetera and then on the very dodgy end of the scale research misconduct. Would you understand research integrity as being simply an absence of misconduct or actively working towards responsible practices?
J	No, I think it's actively working towards, and I think you can develop dodgy research practices by just not thinking things through beforehand. And I think that's the whole point of why we have the base camps going through, because you can design research.
	By just not thinking and not being careful about the way that you approach it without specifically setting up to do dodgy business. And so, I think responsible conduct of research is a way of being. It's a way of thinking checking yourself, checking in with your colleagues, peers, mentors, talking about the way in which you do things, asking questions. Not just assuming, so it's a way of being in a way of doing things. Rather than just an absence of Oh well, I did a thing. Ohh, and there wasn't anything really that was super dodge.
	So, I sat on the [Institution 3] university ethics committee, I was just like an admin person when I was doing my doctorate, so I read all the reports, as they come through. It was part of my job to file everything and read. And we had one person's proposal came back five times. Because he just didn't see the problems the kind of. I don't, I don't know. And I don't know if he wasn't having adequate support from his supervisor. He was, like, doing research at a school. And just like items in his questionnaires were really like, leading questions for the students themselves and totally kind of like ideologically underpinned. But like hey, now you know, you can't really go out there and ask school age children very leading questions. You know, that was like basic, but yeah...
PS	Is there space for research integrity values on your map, are they implicit?
J	I think the values to me are implicit throughout. I have research office offices. Yeah. And seminars as a structure. OK, because, like I did last year, you know, you go and attend, you see. Oh, here's the thing that's come up. I could probably learn something here. I did. I had, actually probably learned a lot of what we did in the course through conversations with fellow students. So, I did linguistics and German and I had a very nice group of friends who were doing their master's and PhD's in linguistics as well, and we've all carried on and we're all doing, I finished my PhD, some of the others only started later and whatever, but through discussing our own research and coming up against different challenges and things. So, I heard about the Open Science Framework, not from any institutional mailing list, but from a friend of mine who said, ohh, you've got this problem. Then why didn't you put it there and she showed me OSF and showed me her profile and said well, you could do it like this and that would give you a DOI. And I was like, oh yeah, cool. That would be great. OK. And we talked about authorship checklists and that. Yeah, that's also discussed that with friends who are doing their things, and you know, come up against like, what is it when you have more than one author and like, I've got a supervisor and this co-supervisor and this other person who did some data collection for me, do I put them on the article? Don't I? What are the things? And it's like, oh yeah, but, and maybe they've done other courses. Maybe I've done a course and then you share knowledge, and there's a space. So yes, there's a structure and I think that's really important. And to me, it's that again, peer collaboration, which keeps you up to date. If you don't. And that's also why I don't have brick walls between my social and my research because it's part of, part of the social life.
PS	So last question is when we think about research integrity training or teaching and learning or the different words we do and don't use, do you think it's more meaningful when we consider it in the context of a discipline? So, in German Studies or in linguistics or in Biological Sciences? Or do you think it would be better, operates better as a generic sets of principles like it currently is?

J	I think, personally, like it currently is, is cool because it's broad and it captures you all in this basket. Sure, maybe discipline specific things could be really helpful for disciplines where they are really specific requirements. I don't work with specimens, you know and medical something somethings. That's not my side of things. And at the same time. Yeah, maybe that, like all social and things ...really universal principles. I think. What we also learned about, you know, these kind of like. Yeah, authorship guidelines or open science or the Singapore guidelines, those are universal. It's not like discipline specific. And everybody should know about them. I don't know as a new as a new lecturer here at this institution, I think I was also interested in finding out more just about institutional values structures. How do we, as a UCT think about things and operate? Everything I've learned about how this institution works is from colleagues in the tearoom, yes. And by seeking out, different courses myself and signing up for them. I didn't receive training. I also don't know how the ethics process works here. I need to still go and figure that out for myself. I don't know how to apply for, if I'm setting up a new research project, I actually do not know where I go to, what committee to follow here. Yeah. So, I find that I find the responsible conduct of research to just be a very interesting component of this whole thing, because surely that is a foundation of the whole island is going about all of this in a way which means that you produce at the end of the day something which is useful and valid and purposeful and in order to do so it needs to take all of that into account, otherwise there's no point. If you produce research which isn't done well, and responsibly and if you made-up research findings and then you wanted to say something about teaching and learning. What then? It's like, so irresponsible, yeah. What I found during my research was there is a tendency to feel fearful. Well, I put it in my ethics application, and I said I would do it like this and I'm doing it slightly differently because things have come up and what I also, through discussions with my supervisor. Well, of course things change and that's okay you need to then talk to that and just describe the problems that you faced or the thing that went wrong or.
PS	And that goes to what you were saying about open communication. So, this is what my plan was, I found X, therefore I couldn't do that and so I have adjusted. Or if it's if it is a challenge to the extent that it actually impacts the underlying ethos of your research project going to have a conversation with the Ethics Committee and they can help because you're not supposed to be a subject matter expert in everything
J	Yeah. So, I think that as well. So yeah, and that that feeling, you don't want to feel all alone, just like completely this is your mission; you are missioning and now you just like climbing this mountain by yourself. It did feel like that for a while and it's very overwhelming. Yeah, I think that thing of working with people doesn't go according to your plan, but it's good to have a plan in place and was important. And then being able to talk specifically about how you rectify things and talking were like what I liked. Also, just from a read lots of education, things about like things like part of having valid research is going and actually just like do your questionnaires whatever, then go back to people and being like hey, so this is what I've like interpreted. What I would like to say, is that kind of where you were sitting with that? And they're like, oh yeah, that's very interesting. Yeah. And that's also part of, like, presenting at conferences or presenting back seminars. And that kind of, so like sharing. And then say, yeah, and then there's this new chance because it is a bit of a conversation and talking with peers, I found to be so valuable.
PS	Great. Well, thank you very much.

Email post-interview:

J	Here I am sitting at my desk having a google and thinking about it - honesty, accountability, professionalism, and stewardship (for some reason, not quite what I had in my mind associated with Singapore statement – well, worth the brush-up). Definitely implicit on my research island – I can see how they operate. I suppose in some ways we did talk directly about some of these values – honesty in research, especially where research is purposeful, as for teaching and learning. Accountability – to participants/students/colleagues/the institution/the research community/, acknowledging where one has made mistakes or deviated from a plan, and keeping good records to show the paths/decisions taken. Professionalism and fairness when working with colleagues is so obvious, that it doesn't even come to mind immediately, but naturally that is so important for collaborations, and I would like to think is how I operate in my relationships in general. Good Stewardship – here too, being organised and keeping good records, having data accessible to others.
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D3: Lerato

Civil Engineering

Speaker	Text
Paula Saner (PS, researcher)	Then we'll talk about the island and then we'll bring research integrity into the discussion because that's what I'm here for. And then we've got a couple of questions for after the interview for consent, and then we'll be done. Excellent. Thank you. So, let's get started. So, I noticed on your basic form that you've got a master's in civil engineering.
Lerato (L, participant)	Yeah.
PS	Are you still working in the same discipline that you got your qualification in?
L	Yes
PS	So, can you describe your involvement in any research projects that you're currently working on?
L	Involvement to what extent?
PS	To whatever extent? So, if you're working on four projects, whatever you're doing on all of those projects.
L	I'm busy with my own PhD. Hmm. I what, at the literature review stage. Busy trying to get data from clients. I've already got some data from a client in Namibia. It took, what 8, 9 months to sign an agreement with City of Cape Town to share their data. Namibia was just an e-mail and then understanding.
	So now I'm sort of getting the data and it's not quite what I thought I was going to see. But it's kind of helped me ask the question differently. Because it still says something even though it's not the something that I was expecting to see.
	Umm, I also applied for a grant last year, which I got for another project, which is not my PhD (laughing, nervously). I have a master's student working on that. And I've got a few deliverables for that this year, so I'm just juggling.
PS	And what do you do on that grant-run project? You said you've got a master's student?
L	So, I'm supervising the master's student on that project.
	It's essentially, I'm supposed to deliver the project, but I'm doing it with the help of a master's student. It's still in like the same field. Yeah, at this point we are busy with the inception report, which is just like a desktop literature review. This is what we're going to do. And this is how we're going to do it.
	It includes learning a new software.
	So, we've enrolled into a course offered by UCT to learn the software. It also requires a lot of data. So now we're sort of at the beginning where we're defining the process of you know what data we need. And to see where the gaps are when we get the data from the client, and we would need to use sort of literature norms and standards on the missing data.
PS	So it's your own PhD and your grant-funded project? And what are your future goals for your research career?
L	Get a PhD.
PS	OK, that's a great goal. It's a very immediate goal.
L	My immediate goal is to get a PhD and I and I think right now I can't see anything else. Although I do. I do appreciate that you need funds, you know, to because you realize as you're going, you need more money because you need to figure this out or you, you know, or you've run out of funds for something else because you are under-budgeted for it. And. And I guess it's a little bit difficult to keep your eye open for funds because some of them you can get through creating another interesting subtopic of your PhD. but you need to write the proposal and an end. So, I think it's such a. It's hard to decide to focus completely and do the PhD when you also weigh and you can see somewhere down the line, you're gonna need money and you need to, like, keep your eye open for what's out there. But I think in terms of future goals, PhD in the short term. And I guess.
	I'm struggling in my department to find my research home because we got a lot of research groups, well not a lot, we've got two big research groups. And. That, the one is an umbrella and the other one is sort of a subset that's more. But it's like a disciplined subset and this one is an umbrella that has a whole bunch of disciplines underneath it.

	So that one is the Future Water Institute (referring to the umbrella project). And you know all the sort of hydraulic water cycle disciplines feed into that. So, I can either belong to that umbrella or belong to this subset. Right? Which is linked to my masters. But my appointment is linked to something that's outside of my research area of interest. So, what's difficult for me about my future is that I actually don't know how to balance my research interests and what I teach. Because what I'm expected to teach is different from a research direction. So that's why I'm just thinking, get the PhD, get it out the way and only then can I really have a plan. Because it's hard to plan because I don't know where the home is because you can take, you know, you can take advantage of the foundation that's already been laid and add on. Or do you need to start something, you know, so, yeah. So, its PhD, once I have it, I'll be in a better position to figure out what the future looks like. Because part of it is being in a team. Well, that's how I see myself and I know everybody else is like, you can create your own thing, but I feel like we can do better in a team. Yes. You come for a special, you know, discipline knowledge. But I think a team has a lot more. We can go further.
PS	OK. And team for you, would you want to join an already existing team? Or would you be more interested in creating an inter-, trans-, multi-disciplinary team?
L	So, the Future Water one is the interdisciplinary team already, so it's already existing. And I'm interested in that space, but I also don't because I'm a young researcher. You need to build your depth in what you know before you get lost in the all huggy-feely, doing all interesting things. But you know, you don't have depth in in your discipline. So, I think I'm conflicted because I need to pick. I need to decide on my depth, and discipline, but I definitely see myself as part of a body that's inter-disciplinary.
PS	OK. So, what is your civil engineering; your water engineering; what is the approach to how to conduct research in your discipline? Like what does a typical research day look like for you? Do you go out and find something truthful, or do you? Is there something else to it?
L	That's a good question. And I guess it's good to because when you come in, nobody tells you, what that is? Umm and I can actually only go on my industry experience, which is not necessarily research, but there's a little bit of pre-research upfront but the scope is already defined so it's not research. So, I think the short answer is within my faculty and within the research groups that I'm part of, there isn't a "this is how we do things". And I think it's sort of expected that you will learn via doing your PhD, I guess? I don't know, you know, but there isn't a tangible anything that you can pull from somewhere to understand, or for somebody to say, you know, for our discipline, you need to attend these courses. It will give you the way we do things. But if I were to think about it for is especially in the water space, it's, it's what do we do? Like we in water, it, we deal with biological bugs, that are existing in nature, so for us it's a creating different environments of those bugs to test whether they can improve performance from what we previously know? So, A lot of it is we take stuff that are known, and we try and apply it in on different waste streams, so different grades of dirty water, using known biology to see how we can change the environment to have a different outcome. Do we go to site from a water from a water treatment perspective? Not necessarily. But you know that's water treatment. There's still like the movement of water from one place to another. You know, that would definitely require site would require because we have a lot of. Also, you see my conflict in my research area, we have a lot of infrastructure that's also aging. And from a civil perspective how do we replace those pipelines? How do we prevent them from leaking? You know and that would require a bit of site visit to actually see what's out there in different contexts. Because a lot of the design principles are sort of based on theory. And if we look at the landscape of South Africa and the different demographics we serve, you know some of the theory doesn't stand the test of time based on how it's used. So, I do think that the future of research for, for from a South African perspective requires us to be more out there. To use what's known but adjusted to our context because as some of the things we designed for aren't used that way. So, what are the small things we can tweak to make it useful so that, that you know, it doesn't get broken, or it's not overused and requires to be, you know, maintained frequently or whatever, you know. So, I think there's a lot of side things that we need to be aware of.
PS	OK. OK. And how do you feel about this approach to research? Does it work for you? Do you agree with it? Would you change it?

L	I think what I would change is. I think for me, when I look at it, a lot of, a lot of what we've understood technically is not a problem. It's when the social part comes into contact with the technology. And I think for me, there's little understanding in in in that trans-disciplinary intersection between us. Because water is also such a personal thing for people and a religious thing. You know, so. So, I think that a lot of our research, our technical research needs to have some understanding of that, because I think that one degree might change how we package some of the innovations that we would come with.
PS	That's a great insight. Great, so now I would like to ask you, and I am going to have to translate this from my question sheet because I wrote it in an education way which I'm typing it up at the time I was like, oh, this is a great question. And then I was like... not all people study education. How will they know? So, when we think about different, the different way this disciplines function. Some disciplines function where the knowledge is important. So, in maths or physics you need to be able to understand equations and work out equations. Other disciplines function in a space where the way you act or behave or the characteristics that you have become acculturated to, accustomed to, that is what is valued and what is important. So, one is called a knowledge code and the other one is called a knower code. So where do you think your discipline sits?
L	Knowledge
PS	Got you. That's not overly surprising. Especially given your response to the previous question. Yeah. Where you say the social aspect is important and needs more focus? Yeah. OK.
L	And I guess that's why we don't do it because it's a knowledge-based discipline. Umm, but we get trumped by the social all the time. Because the knowledge creates fantastic designs, and the social's like nah-ah; we are not going to use it that way. Right?
PS	Because you didn't think about this, you know, religious or social or whatever aspect to it. Great. So, excellent, thank you. So, do you feel like an authority, like a legitimate knowledge conveyor in your discipline?
L	Yeah (confidently)
PS	Yeah, you do. OK. And how did you know when you had, when you were this authority?
L	The degree grooms us to be that. And the way the degree is taught. Umm. And even in practice, you know. We are the ones to come with the solution, so we are the ones with the knowledge and the expectation is that because you have the knowledge, therefore you have the authority to tell us what to do. And I think because of the knowledge-based discipline, and you know, there's few who know the knowledge, you know, if you're a civil engineer it you know a lot about it. So, and you wouldn't know about electrical. So, because you expected to know then for me it just lends itself that it comes with the authority. I don't know who told us and I don't know where it comes from? (Hearty laugh)
PS	And if you if you have a conversation with your colleagues in the coffee room, yeah, or whatever tearoom, you still feel like you have that authority?
L	Yeah.
PS	For me, I'm. I'm very glad that you. You're in that position because no one I've interviewed so far has.
L	Yeah. But like, why not just like... We the ethos. Maybe this is what I took from it, right? The ethos of our teaching is that we are building the next, you know we are building infrastructure to serve the next generation. We clean water to ensure that people don't die from diarrhoea and all sorts of other stuff, you know? So that comes with a lot of power. And it comes with a lot of, not what is it not respect? He must be responsible. So, a lot of responsibility in being sure that you actually are conversant or you, you, you comfortable in the knowledge that you know. So, you have to know because you hold so much power in the things that you do so. Yeah. For me, it's just like you can't not. And if you're not, then maybe you aren't comfortable with how sound your knowledge is.
PS	Yeah. OK. Sound about right for a knowledge discipline. So how does your personal identity, you Lerato, at home weekend engage with your disciplinary identity?
L	I guess I identify with authority, right, you know? I like to be in a position to lead. Yeah, it can be a team player and I can be lead. But I think I'm at my best when I'm in the position of deciding what should be done and how it should be done.
PS	And is that how you operate at home, outside of the research space?

L	Yeah, but I'm learning. I'm learning not to take on too much and to let other people lead. So, I think the blind spot of the knowledge thing is all-knowing all-doing. And I think it's learning how to bring everybody else in to co-create and to co-lead and to share and own the knowledge. What else? Uh. But how there's my research identity or the OR the teaching identity, what was it?
PS	How does your personal identity engage with your disciplinary researcher identity?
L	Ohh, OK, personal identity. I guess I'm curious. And I like people. And I think that might actually differentiate my research because I don't think I'm like a lot of my colleagues and the knowledge space. And I think the fact that I'm open to consider co-creation and co-learning and the fact that I'm aware that I can be overbearing with like. Because I've said so, I think that will have a very, I think it will set me apart in my research space because I'm slightly different.
	Not to say that there aren't other people, but I think I'm slightly different in that I'm happy to bring the social, the knower side, of things, or see how that fits in. Because I kind of see the world in that way.
PS	That's great. Excellent. So, let's look at your island or your various documents that you have created. So, the first thing is take me through your process and take me on a tour of this island that you have attempted to create.
	Yeah. OK, so I got stumped by the word island. OK, because I initially saw it as a small spot in this vast ocean. So that was my picture of an island, and then when I tried to... because I saw I'd have to take you on a tour. I was just like, how do I get you on the island? So maybe it's not the island in the middle of the sea? Maybe it's what happens on the island, right? And they don't got onto the island. And then I was like. I am a start point A end at point B person. I guess that's engineering right? So, it was. What's the purpose of the island? Why is the island there? So, I spent a lot of time trying to figure out what's the purpose of the island. And then what did they ask is like, I don't know. So how can I take you through an island when I don't know why the island is there? So, then I scrapped that idea, and then I was just like, because then you said I can use the attributes to make, like, landmarks on my island. And I was like, OK, attributes, I just like Google. What does attributes mean? Google, what does characteristics mean? And as it's like, so I struggled a lot with attributes, characteristics linked to my research identity. And I think then then I realized that I needed to step back and think about what my research identity is. And I guess the word identity, I also struggled with; research areas, easy for me. Yeah, right. Because it's technical; connecting that dot found the gap there. So then are just like, OK, let's start with just throwing a whole bunch of stuff like this. So, OK, so initially as is like, maybe my you see. So, I started listing that and I was like that's not taking me anyway. And I was just like, OK, so maybe I have like you know how Dubai has like this like or is it Dubai or the UAE what do you know? Where they have those cool islands that are all connected...
L	So, then my thing was just like, OK, so maybe I can have, like, this central home or hub in my island that brings everything to the centre of the island. And the centre spot is like the happy place of the main research attribute. So, my whole thing had nothing to do with me. It had nothing to do with what I'm juggling with. It was just I just zoned on zoned in on research identity. And that for me was just research and it did not encompass my personal identity with it. OK, so then I kinda then I was like, OK, I sent to island with like mini-islands and depending on where you are you could like hop onto this one to get you to the other one. OK, so I was like, OK, yeah, that could work. But then I was like ohh, but now I don't have landmarks. And just like, OK, let's do a profile, engineering! Yeah, let's draw a profile in. My thinking was just like, you know, you started here and you're by the beach and it's all nice. And you got a tree with some shade, and you know, and. And I just like. Ohh. And then that could be like the meeting spot, innovation in people. And then I was just like as you traverse the island, they'll be like hills that you need to climb. They could be like super difficult and then be like other smaller things and other smaller little things. But once you get over it and we add everything together the thing was like you come to some other happy place with like I don't know beach chair. This was like my beach chair idea, beach chairs and everything and like uh, how do I take you through a journey? Because in my head it's my research area. My research identity must have a point. It must have a start, and it must have an end to link everything. So, I was like, scrap that idea. And it's like, OK, but then we can take this and make it like, you know, a cool thing with, like, stuff. And then I still have my tree there. And this is like my rocky output. And then I was just like, oh, maybe I think I like the idea. Oh, then I thought, you know, maybe you start here. And if you go here, you can stay there or you can stay there, or you can stay there and then some where you can come together and then we all come together and go somewhere else together. You know what I mean? Like you have these different pathways that eventually converge in the centre and then we all end up in some happy place. And then I stopped that train of thought.

PS	If you continue that train of thought, what is this happy place? What does it represent? What will we find at this happy place?
L	So, the happy place would be the point of my research. It would be the bigger picture. It's like the impact that I would like to have with my research. So that is sort of like the happy place. OK, right. So, then I was like, huh, I think I'm onto something as much as I started this because I was just like. How am I gonna draw island like yours, looks super cool. But it's like, so simple. It's like, stick men in and everything else right for me. I'm like, thinking cool 3D. (Both laughing) My inner engineer was absolutely on fire. And I was like, OK, so then from here as is like, I think I'm getting closer to it. So, from here,
PS	Can I ask you before you go? So, this is your happy place, which is the whole point of your PhD. What values or characteristics underpin your PhD? What is the purpose of your PhD?
L	So, for me it's to create tools that the wider public can use to better prepare us for future climates, from a water perspective. So that's like, that's the goal.
PS	And what motivates that in you?
L	What I thought what, do we die? So, for me it's a basic necessity I don't think it's a warm, fuzzy feeling, connection to the end goal. OK, I think it's very methodical, calculated. But next actually, just like pick. It draws this in a different way. OK, because this is what this really is, and I think it will answer some of the question you just asked me. It's just gets more technical. OK. So then as is like, OK, so if I were to like go with my like pretty island idea, (trees diagram) and this would be like all these like technical computing models in here. So, the premises of my research area slash identity is I actually want to be a thought leader in helping us create systems that combat the effects of climate change and, in particular rising sea level and drought, those two in particular.
PS	And what values underpin you as this thought leader in the future?
L	Umm. I think the fact that it's South Africa. There's a lot of inequality associated with water. And a lot of our towns are designed in a non-inclusive way, in terms of access to water and... How do we, in thinking about the future, address some of those inequalities. Yeah. So, all of this is very technical. So, you're gonna need to keep drawing me back and ask questions.
PS	OK, so let's, let's go to your technical model.
L	There's a more technical model (<i>interconnected trees/islands</i>). So, this says so, so, so this is, and so with increase in temperature, a lot of the coastal cities are under threat from rising sea water levels, right? So that will mean that we have more saline groundwater, for example. So, my interest would be how do we find new bugs that are happy to deal in saline water? Because I mean, there's a whole colony of biology in the sea, you know, so that lives and thrives. So how could we replicate some of that and use it to clean the water, so we can still use it. Right. And link to that would be, you know, looking at alternative sources of water. So South Africa is a water scarce country and I guess because now I'm living on the coast. I'm interested in the sea and the coast, but the inland has its own major issues also. And we need to have a different view about alternative water, whatever that is, whatever comes from.
	And that would then be important to bring along people and behaviour. So, I guess for me, what kind of excites me for the future is understanding the value systems we place on water like how that intersects with our personal values from a religious perspective, from an economic perspective to see how different we all are. You know it does somebody in Constantia and somebody in Imazamayethu maybe they might actually be more similar than we think in how they view water. And it might have nothing to do with income levels or whatever.
	And how do we how do we normalize the education and relationship with water to help us conserve it? Because at the end of the day we all need to save so, that they can be more for everybody, and if we have alternative sources, it can't then be classed and graded according to "you are here, so that's what you get". But a lot of our problems also is that by location we live in different areas where certain areas would only be able to access that grade of water just by the fact that the geography lends itself to that. We can't do anything better. It's not that you are a lower-class citizen. It's the geography that dictates what we can and can't do, to still make it affordable. So, I think that people aspect is like that that that thread that I'm excited to like...
PS	You know, you keep coming back to keep coming back to it time and time again
L	You know. Right. Yeah.
PS	So, when you talk about normalising education, about water. What does that look like to you? What are we teaching people? Values? Are we teaching people practical skills? What are we educating them about?

L	I guess I'm not sure yet, right? I think what we know is, people's own values with water. And I think the what's missing is how do you design the education system and where you pitching it? Because I think there is as small technical part that people need to understand why certain areas will get certain types of water to still make it affordable for everybody, and how do we decouple that to the class of citizen that lives in those areas? And especially in the South African context, that would be very difficult to educate. And I think it's just something that I've sort of like it's at the back of my head based on what I've read.
	The papers that I've read, because it's not quite right, no, it's not my PhD at all. My PhD is very technical. But you know what, I'm realizing that with the technical solution that my PhD will bring, there's a huge social component that would make it fall flat. You know, just because we haven't brought the communities with us along the way, you know. And I guess the interesting part is I don't know what the education part looks like. And I would be interested to, you know, create that, you know, because I think even with Day Zero here in Cape Town, they're scared us, right. And it was all the people who had access to the news and who knew who and who knew who in the universities and knew the latest. You know what I mean? And. And how do we make sure that, that frantic communication stays with us and becomes just "ohh we live in a country that's like this" because it's like we go from Day Zero. Then we all say we're all saving, saving, saving and then it rains and then we go back to normal. You know, but at the same time, we still making lots of babies and.
	So, we need to have a cultural change. So, I think my interest is really like, create a cultural education around water, that is a national culture of our water system. And it would be to figure out where do you start, how do you start at which levels, language barrier, rural versus cosmopolitan areas, you know, completely different teaching mechanisms. I think that's in a nutshell. I think that's actually maybe that should be here in the centre.
PS	It's your diagram. If you wanna put it in the centre, then that's where you should put it
L	The more I think that, like, that's probably that aligns a lot with the values and the softer side in me. While this is all like all the technical stuff.
PS	As a question from someone who's not technical-minded, you're saying that we can hop from saline water treatment to sea water level rise and there's this sort of very clear path for you between. Can I hop from any of these trees to any of these trees or is it just a straight shot across? (Referring to trees/islands diagram)
L	You can actually hop anywhere. They're all interconnected, because I mean this and this sea water level rise and people behaviour. Where we live, you know, if we would say to Camp's Bay, 10 years from now you guys won't exist, we need to relocate to you. You know you're going to get somebody still sticking to his R20 million mansion, saying until... I'm not going. But, if it were to happen to like, I don't know, some Township that's very close to the sea we'd the relocate them because the value of land is nothing.
	You know, so there's so many other intersecting things that water intersects with them.
	I think we think about it in silos, and we create solutions that don't serve us because it's a siloed view. So, I thought I did think about that, and I did think about colour coding, but I was like, no, this is gonna take me 3 hours, she said 45 minutes. Okay, (road map) so this is just like a structured more detailed if I were to say road map of that baby (referring to interconnected trees/island), in a snake form, you know like elongated or whatever. So, this is more my PhD. So, when we use less water although it's fantastic, it influences the performance of wastewater treatment facilities. And during droughts in some areas, especially low-lying areas, so wastewater treatment plants are always at the lowest point, so either next to a river or, probably closer to the sea. So, they in coastal areas they would probably be at risk of sea level rise first because they low lying. So, part of my PhD is to first see to what extent we seeing evidence of sea water intrusion into our coastal wastewater treatment facilities? And then because our bugs aren't, we haven't selected bugs that are happy to live in saline conditions, having sea water in the water and wastewater facilities might influence their happiness. And then which then leads me to my people, which is a behavioural water use model models in response to drought. OK, which is, I don't know. So, I think these are like little. Yeah, they're not all on one island. I think they all...
PS	Are they on different islands?
L	I think so, because like, I don't know if they. I think maybe this is a better picture because then (referring to trees/islands diagram)
PS	Why don't you get out on new scrap of paper and draw that island? The new island.
L	I don't know what it looks like though...

PS	It doesn't have to be perfect. I'm not asking for a beautiful landscape that's inspiring (gestures to wallpaper of a landscape). So now let's talk about your island singular slash plural.
L	No. It's not gonna work. It's not gonna work.
PS	It will work. So where? Where is your PhD? Does your PhD have its own island?
L	And this is a little no, you see. And this is a little bit of PhD, school PhD. Alright. And this is the project that I've taken on, OK. The grant project that I took on and this is like out there at the moment. So, I guess I guess taking bridge idea. Yes, for me in my island I have this whole thing about people. Which is the knower concept, the knower. Yeah, right. And then I have this knowledge concept that I'm struggling. I think this is my island actually. OK so in my knowledge I have like different trees. Yeah, and trees and knowledge (drawing three trees). And let's draw a road, and a river.
PS	Alright, there's the bridge is going over a river, yeah.
L	Funny, now, whatever my drawing skills are failing me because that's sort of a river, and this is a bridge. And guess, why have I chosen trees? Yeah. OK. So maybe this is like me in my house. Copying your idea. For me, it's me, daddy, two kiddies. Right. And I guess trying to find. I'm trying to find a shady spot for me to relax and have my hammock.
PS	And your hammock so the these have you decided on these are your knowledge trees?
L	These are my knowledge trees.
PS	So, do you want to hammock to be linked to your knowledge tree?
L	I think so and I'm not sure which one at the moment. So, I guess on the one I have. I guess I'm the one I have. I have infrastructure somewhere. The back of my mind. OK, the reason for that is we have aging infrastructure. We have a growing population. And there's a need to. Increase capacity and the innovative way you know. Imagine it to dig up the whole of the CBD because the pipelines are now 100 years old. I mean, how do we do that? Right. How do we, if you look at COVID and now that commercial buildings are standing empty. If we want to bring people there, you know, we bringing in more people. So, it's gonna require bigger capacity in terms of pipeline to supply it to take away the water. How do we upgrade that infrastructure when we start repurposing the different living areas? So, I see a big meeting gap for that, and I guess that's the fact that I have industry experience. And I guess part of it is I don't need to solve it. I can be interested in it. I can be aware of it, but do I need to solve it.
PS	And is it important that you've labelled this tree, which is close to your house, infrastructure?
L	Yeah. And I'm gonna put the water supply somewhere down there. Yeah, because, I mean, I guess that talk a lot about it with my kids also. And my husband and it and it influences where we want to settle eventually. You know, because the system wouldn't stay inland and trust the water. OK. Umm, so I think at a personal level it also influences way. I'd like to live and work and what I advise my children, about where to live and work also, right? So, I think water sources. Let me say alternative. OK. Because, you know, we can save water all we want. If it doesn't rain, saving is not going to save us. So, for me it I feel that it's far more valuable to look at alternative sources and even look at the ones that you say it's expensive to treat. OK, so if it's expensive, look at it differently. How else can we look at it? Are they different ways of looking at it? And I guess for me these two go well together, but from a research perspective, they're huge disciplines on their own. And my MSc is really in water, so it would be easier for me to stay in water. Logically, it would make sense for me to stay in the water. And then this is a whole AI artificial intelligence. Umm. Predict, the models you know it's like this. That's the, my picture of the model, this one, this one (refers back to trees diagram). You know, so there's different kinds of models. And you know big data. You know, the more we know how we behave in certain periods. The more we can plan better, and how to communicate better, you know, so if we had all this data and how Cape Town responded. We can replicate it to all our coastal cities, you know. And then you know, and I guess this for me. Is the bridge actually my gosh look at my island (chuffed with progress)! This tree (big data/AI tree) is a tree that wants me to connect to the people tree. OK, right, because as much as the knowledge is, the knowledge is the easy part, right? We can create all this data and we can create more equations to help us understand the knowledge. But the moment we add the knowledge to predicting how people behave to give us a different outcome to help us plan better. You know, like, yeah, where is this bridge? Yeah. Do I build it here? Do I build it there? But for me, I see a link between these two. And I think with technology, these two can benefit from that. OK. So, I'm not sure if it's a hammock anymore. I think it's a fooffy slide.
PS	Ohh. OK. Right. So, we're going on a slide and we're going to the past all of these.

L	I think maybe it's a zipline that allows us to connect these you know, and in each zipline, there's like a little house there. You know, you can zipline to that house you know, zip line there. But I guess yeah, like I don't think it has a central home anymore. But I think they're all interconnected. I think this is the central way. I think maybe this is the central one and it's all these zip lines that it connects. I think these two connects (referring to people and infrastructure trees) these to you. I don't know. Now I'm just like, no.
PS	You're good, you're creating. And does your river have any significance?
L	Yeah, I think. I think the river says. Yeah. So, you can't zipline between here and here (infrastructure and people trees). You actually need the, you need the bridge, actually now that we're thinking about it. Because I think the bridge between people and all of this (gestures to all the trees) is important. OK, so maybe not necessarily the river. It can be a huge gorge. It can be a steep nothing. It can be an abyss. But I guess river because I'm in water, OK? (Laughing)
PS	So you can zipline between these trees on the side of the bridge. Yeah, but you need the bridge to be able to get to the people. Yeah. OK.
L	And the fact that you can zipline between these three and connect them when you walk over the bridge, you come with like a well-rounded. You know, like your well-rounded buddy walking across the bridge.
PS	And what does this well-rounded person? Not look like because we don't really care what they look like... What values do they bring? What are they gonna bring to the party?
L	I guess an understanding of context. You know the infrastructure's local. You know, it's our local problems. It's the way our communities live. Like I was actually saying to my husband. It's so interesting that Sea Point is just full of flats and these people who live there and raise their entire families and the flat like. But when you look at Gauteng, where we're from, there's very few suburbs that is just a whole bunch of flats. We all are used to single-dwelling houses. It can be small, but I need a yard, you know. And interestingly I sat in, uh, Centre of African Studies, the guy who heads it up. And he was saying that part of their studies is that there is a cultural preference in Africa of us to live in little homesteads and not to high rise building is actually a cultural thing. I can see it. I can see in. Like if you think of New York, I mean, like people live in apartments and they're massive. And this is like, you know, and yet become. Yes., we don't have land, so we need to think creatively and going up makes sense. So, for me it's understanding our local context is important for this person to walk across the bridge. And our local context, we need to bring the at the AI and adjust it to our local context so that it serves us.
PS	So making these things (referring to trees on left bank of river) work for these people (referring to tree on right bank of river).
L	Yeah. Yeah. And these people is, and because. And I guess because a country is so. It's so layered in its people and its geography. I think as a country on its own, if we were to try start making those connections, we could really create some interesting things that could be applicable to, a different geographies all over the country just because each of our regions are different and culturally different and relate with things in a completely different way. And. Yeah, so, so, so I think I think I think the one big characteristic of the person would be to understand our local context, and to be and to be in tune with it. You know. Because I think some of it is like we all collaborate with all these universities, and we all do kind of like the same thing, you know. America's doing this and this we're also doing that. But there's a subset of what we need to do to localize it and to make it relevant for us in its application. You know, maybe we can, we can leverage off those collaborations and create this first world knowledge, but we shouldn't leave it there because it's not useful without the context, the local context, and then we can walk over the bridge. And bring the people together with the thing.
PS	Are you happy with your?
L	I'm happy with my thing now? Yay! (celebrating)
PS	OK, great. So, we've had a great discussion about your island. Yes. And we'll get back to get back to it at the end, but. So now that we've talked about your island and sort of what your researcher identity is and all of this (gestures to all the papers). We're going to talk about research integrity. So does your discipline, civil engineering or engineering in general? Is there a code of conduct or a code of ethics that you need to work within?
L	Yeah, it's on the website, the faculty one.
PS	Ohh. OK. And what is your level of engagement with research integrity?
L	That I did your course!

	But I must say, because I actually did say this as feedback to the department that. I did that because, I was just like, OK, great. I'm going to be researcher like, I need to know what researchers do. So, I went and looked and that's why I did it. But it is nowhere suggested or nor is it mandatory. And I appreciate they can't make things mandatory, but because it's got such a huge impact and far-reaching consequences, I think it should be mandatory.
	Side note. Yeah, because it's such an eye opener. Because I think what? I think people think just because you have integrity, you won't make those mistakes but, there's some grey areas where unknowingly you could be doing things without realizing that they're actually wrong.
	And they can throw a link at us and say yes, go familiarise. Nobody reads that. And attending a course is another way. Just to give you a summarized version and because we all have different biases, we all going to hear the things that we needed to hear. Versus reading stacks and stacks of paper that you know what I mean?
	And I liked also the discussions that we had because you get different perspectives and you. Although there's always so many people from the Health Sciences and a lot of this training, does nobody else attend training?
PS	Well, look, Health Sciences come from a very particular research paradigm and it's very regulated and many not all the time, but much of the time they actually have targets to meet in terms of CPD credits, those sorts of things.
L	So, it's measured?
PS	In some in some ways it is measured, but in other ways, I mean you were talking about earlier the sort of where was it? The degree grooming you into the knowledge which provided you and in many ways ethics training is groomed into Health Sciences research shows, so they're, they willingly come on to all of these things because they're more aware of it.
L	Got you, got you, got you. And although we do have ethics in our thing, in civil engineering. And I think it's, I don't know what they teach them in ethics, but it's more. I mean, ethics is ethics though, but I think it's like around if you look at corruption around all infrastructure stuff. So, I think it has that vein. You know, like it's more in that space. But for us it's not, like it doesn't have the same effect as a health sciences faculty where it's actually part of the culture. Like that, is what they know about, I said to add on in fourth. And like add on in like the last semester, like the last term I think we forgot a full stop. So, it's not a thread that's being threaded from like year one all the way to year 4-5. It's like ohh by the way, by the way, you're about to like start working, ethics. Don't be dodge.
PS	Right, OK. Well, that feeds quite nicely into this. So, what do you understand about research integrity values? It's not a trick question.
L	What do I understand? I don't know. It's important.
PS	What? Why? Why is it important? What importance does it bring?
L	I think because of what we do holds so much weight. And if it's incorrect, it can have far-reaching consequences. So, it's important that we are all aware, and do the right things, and I think there's so much value when people share the mistakes that have happened. When things have gone wrong because sometimes all of us are doing a little bit of that, but not realizing it. And just sharing mistakes also improves on our practices. Also, especially within the discipline. And you don't hear a lot of that. And I'm wondering if it's because we don't hear a lot of it. Does it mean that it's not happening?
PS	OK. So, so the absence of research integrity doesn't necessarily mean that everybody is acting with integrity? Or the absence of research misconduct?
L	Yes, that's what. I'm. Yes. Because, I mean, I guess everything is right until somebody gets caught from misconduct. But we don't share any of the practices. There isn't. There isn't. There isn't a prescribed way, I guess in medicine, like if you're going to cut somebody open. If you did not follow that, then you did it wrong and I guess with the experiments, if you follow the methodology, you should do it that way. Then you have done it correctly. Look, I guess there's a lot of declarations that you need to do. So, I guess that's the one additional test, not test, hurdle to just remind you again, did you do everything right? Yeah, but I think it's important.
PS	OK, great. So, do you remember the Singapore Statement on research integrity.
L	No

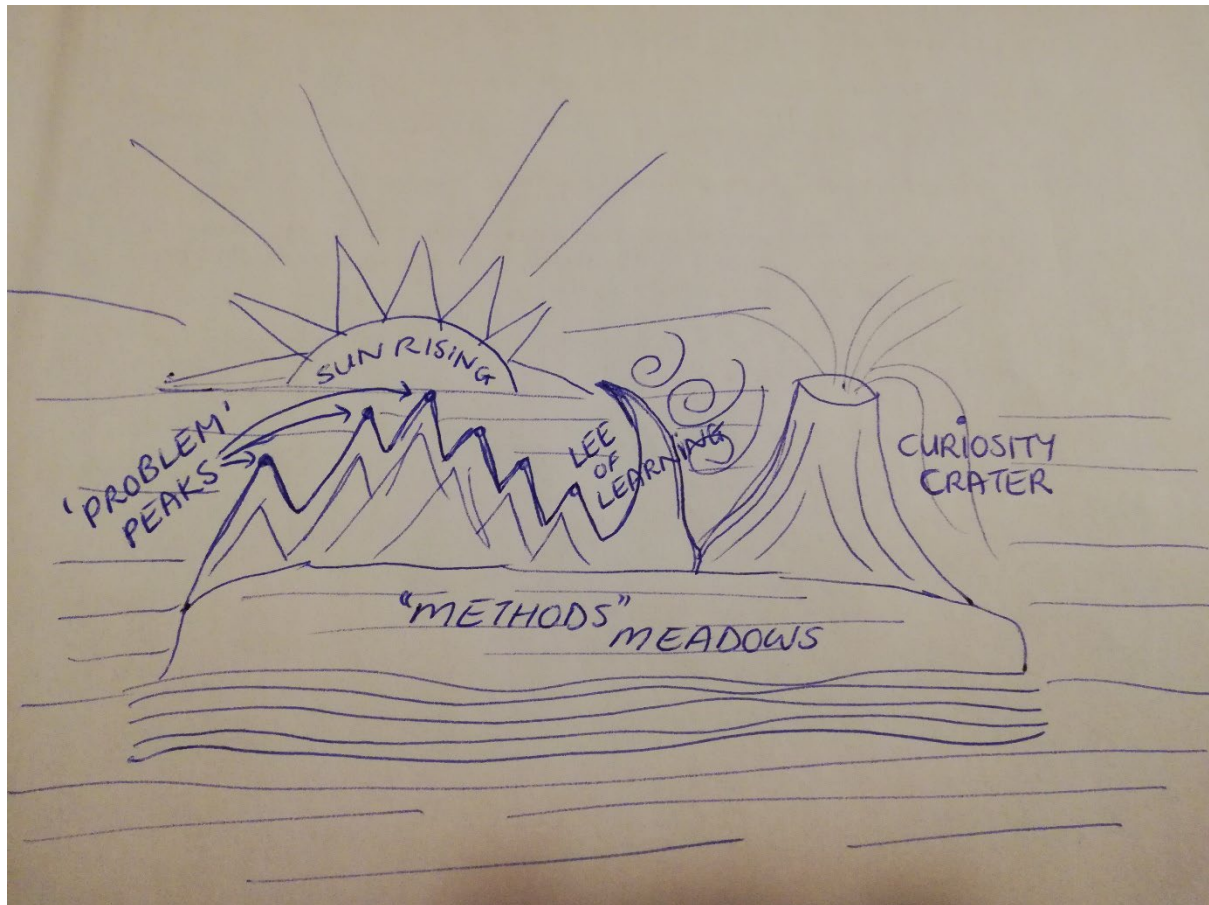
PS	OK, no you don't, that's fine. So, the basic principles are very generic. And this is written in a way where it is not specific to a particular discipline. So, it asks us to be honest in all aspects of our research, accountable and the conduct of our research. It asks us for professional courtesy and fairness in working with others, and good stewardship of research on behalf of others. And then there's a whole bunch of responsibilities that kind of outline what these principles look like in practice. Do you think that these sorts of principles that Singapore statement talks about? Do you think there's space for them in your discipline, or do you think that there are already integrated into your discipline?
L	I think they're integrated into our discipline. But you know. I don't know how to explain it.
	They're integrated in that that's we just know, but I'm not sure if that's a good enough answer because, I can't quantif-, I can't explain and give you examples of how we just know you know. Is it because it's a knowledge profession and it's taught in a way where we where it's emphasized that you know the numbers and the calcs are important because if you get something wrong it has consequences?
	So, you must be careful. You must double check and if you make a mistake, you must be honest and tell somebody because it has consequences.
	But I don't think it's integrated in a structured way. I think by the way we are taught. These principles are embedded in it, but I don't think it's a standalone structured teaching. Umm, where they teach it and then they link mistakes within our discipline to help us appreciate it. Yeah.
PS	Yeah. So would you think they're compatible with how your discipline works, OK. Is there space for them on your map, or are they already on your map somewhere?
L	See, they're on my map. Because I mean, like for me it feels like you don't have to say that. Because by you wouldn't be doing this if you need to be reminded about that.
PS	Great. So, can you, a de-identified example obviously, have you had any instances where you had a research integrity challenge? And can you give me an example of you have and how you dealt with it?
L	Research integrity challenge, no not yet, hey. I mean, I've been asked to review things that I felt was outside my of my scope of expertise that I've declined to review. Yeah, I think I get more of that. I've been asked to review like a master's thesis, and I was just like, I can't do all of it. I'm only comfortable to do certain portions of it.
PS	That kind of goes in here. Yeah. And it talks about peer review.
L	Umm. No, I guess I'm like, way down at the bottom of starting my research career, so I haven't. I haven't really dealt with anything.
PS	Well, that's great and I hope that ...
L	It stays that way...
PS	I do but I'm confident you will come up with you will come against challenges. But hopefully you will be comfortable to address them. Great, so we've talked about that already. So, when we think about teaching research integrity and you came to some of the course that I gave, do you think it's helpful to think about it in this very generic kind of disciplined removed sense, or do you think it would be better if we built it into the disciplines into the islands?
L	I think it should be built into the disciplines because. It makes an assumption, that people who are wired a certain way gravitate to certain disciplines. And by default, they are responsible, honest and so on, on this and that and that all of that. So, you know, some of us go through the teaching and you just felt like you were taught, and nobody needed to give you actual course. But then why do we have so much corruption within those, you know, the built infrastructure environment? So, for me, that then means that it should be a course that's specifically built-in.
	And if I think of our engineering degree, it should maybe be factored in throughout the curriculum and not as a "you are now about to graduate you in fourth year, you have all this knowledge oh, by the way, here's ethics don't forget". You know so it should start in the little things that they're doing in the introductory courses. Because maybe some people need to see it more often. Because some of these people become the people working in government, the people who own businesses and, so you know, so yeah.
PS	Not all of them are going to stay here and become researchers. In fact, most of them are...

L	Most of them are going to leave. And. And I almost see it. I guess you're looking at from a research perspective like, I have, like, the other hat on, I think I think it should be part of the teaching course, you know, like for graduating and stuff. It's also just as important. And I think for postgrads. I think it should be part of people submitting their, what is it? That's the thing that we need to do. The MoU. Because, I mean, it's just as important as the MoU, right? And I don't think it should be a box ticking exercise of. Have you looked at the ethics? Yes, we all say yes it should be you should attend the course and we give you the whole year to do it. And by next year there should be some consequence if you don't do it.
	Because then it just keeps getting rolled over. Then you get to a point where somebody is ready to graduate, and you can't hold them back because they did everything right. But they didn't do that. So, I think it should be taken seriously and it should be a serious requirement for the first year. Like if it's not, because I mean, it's not even onerous. And if it's not done, then you can't enrol for the next year or something. It should be that serious. Because I think also people come from different institutions. People come from different backgrounds, people have different understandings of doing things, and in some research groups things were done differently. So, I think from a research perspective, I think there's space for it to be part of the MoU when we sign up. Yeah.
PS	OK. Cool. That's the last formal question.
L	(Looking at island) Ohh OK, I forgot my postgraduate students, I have such a lonely island. (laughing)
PS	The last the last question I have was would you like to update your map and your commentary as a result of the conversation that we've had?
L	Yeah. I don't know where to put them, because I think as much as there's all these trees, there's also like students and a whole team that's going to be part of it.
PS	Are they in trees? Are they in a house? Are they chilling on the beach?
L	I guess they're in trees.
PS	So, are they in all the trees? Yeah. OK.
L	They in all the trees. So, I guess I see myself in the multidisciplinary thing, if I'm actually looking at it now.
PS	And these little people you're putting in the trees or your post grad students?
L	Yeah. Associates. Yeah. Postgrad students, actually. Yeah. That's great.
PS	Yep, great. Cool. So, may I keep your new map?
L	Yes. You can keep my new map.
PS	Thank you. It's beautiful. I love it.
L	Thank you so much. It took us whole bunch of tries to get there.
PS	But I hope that it was a useful exercise for you to try and picture this.
L	It was, it was, and I think it was a good to start here (gestures to other documents) and to probably finish it together. I think that was also useful because I don't think I would have gotten that by myself without having all the conversations and discussions we're having. After sharing this one. OK, yeah.

Appendix E: Island maps and participant synopses

E1: Ashley

Public governance and research methodologies



Participant synopsis

Ashley is 'mature' emerging researcher who has recently returned to academia after an extended period working in the private, non-profit, non-governmental and governmental sectors. Her doctoral qualification is in Social Development, but she is currently employed in a School of Public Governance, an adjacent or umbrella discipline into which Social Development falls. Due to the varied nature of Ashley's qualifications, work experience and recent reintroduction into academia she is struggling to find her research niche and a place for her to practice the different pockets of disciplinary knowledge she has built over the years. The one thread, clearly visible throughout Ashley's interview and creative exercises, was her personal preference for what could be termed 'generic skills' or 'generic knowledge'. It is worth noting that this generic knowledge is practiced in a disciplinary space and so the different discourses associated with this generic space leave Ashley feeling at ease in some instances and extremely uncomfortable in other instances. Ashley's personal identity is well aligned with the approach

to the generic knowledge that she takes and therefore offer her a sense of comfort in a sometimes-uncomfortable disciplinary space.

Ashley's disciplinary space is characterised by a knowledge specialisation code, where the specialised knowledge possessed by those in the discipline is valued above the behaviours or attributes of the individual actors. To the extent that Ashley has disciplinary knowledge in a range of sub-spaces, it could be argued that her disciplinary knowledge is broad but shallow. This may also account for some of the discomfort that she finds herself in. On the other hand, she has deep knowledge and experience of and practice with generic knowledge that can be applied in the disciplinary space. The generic space, where she is most comfortable (the metaphor of a peaceful meadow on her island), is also a space that is characterised by strong epistemic relations and therefore a knowledge specialisation code. This compatibility means that while she does experience discomfort in some elements of her research practice, there are sufficient points of contact to allow for transition between the spaces and also the recognition of her important epistemic contributions to the development of future disciplinary actors (i.e. postgraduate students).

Throughout the exercise and the interview Ashley's position was that her 'true discipline' related most closely to what she teaches, that is, generic knowledge and skills, in the form of research methods, methodology and design epistemologies. For her this meant that she was practicing one knowledge code in the context of another and using this as an attempt to extract herself from the ambiguous position she found herself in.

The values that she highlighted as underpinning her researcher identity (openness, open-mindedness, curiosity, problem-solving, providing solutions, collaboration, flexibility, integrity and open to data 'stories', respecting people) are generally values to be found in the research space and are complementary to/with research integrity as a field of study. Ashley conveyed that integration of ethics and integrity into her preferred discipline (the generic space of research methodology) was purposeful and crucial to developing postgraduate students. She has explicitly and purposefully integrated RI and RE into her engagement with students and sees these fields as 'doing' spaces (e.g. "you will do your research properly, that there's [sic] no questions, so that it can be published"). By bringing action into the narrative, it is possible to interpret Ashley's framing of RI and RRP as behaviours and practices and therefore leaning closer to a knower specialisation code. The explicit nature of the integration is demonstrated in her purposeful actions to embed institutional policy expectations into her research methodology teaching space. She is blending generic content in her research methodologies course with generic content in RI instruction. But it is also clear that RI is viewed through a social lens;

descriptions of “purposefully thinking”, “going to follow” “living this way” all support to argument that Ashley sees the emphasis of research integrity as being about behaviours. As an actor in a space which is clearly a knowledge specialisation code but who values the knower specialisation code of research integrity, she is making purposeful decisions to foreground these social practices within her own sphere of influence. Ashley acknowledges that the epistemic relations of the discipline, in this case Public Governance (rather than research methodology), could have an impact beyond the site of knowledge production. Therefore, the explicit inclusion of the social relations (the doing) of research integrity and responsible research practice hold value for her and her work.

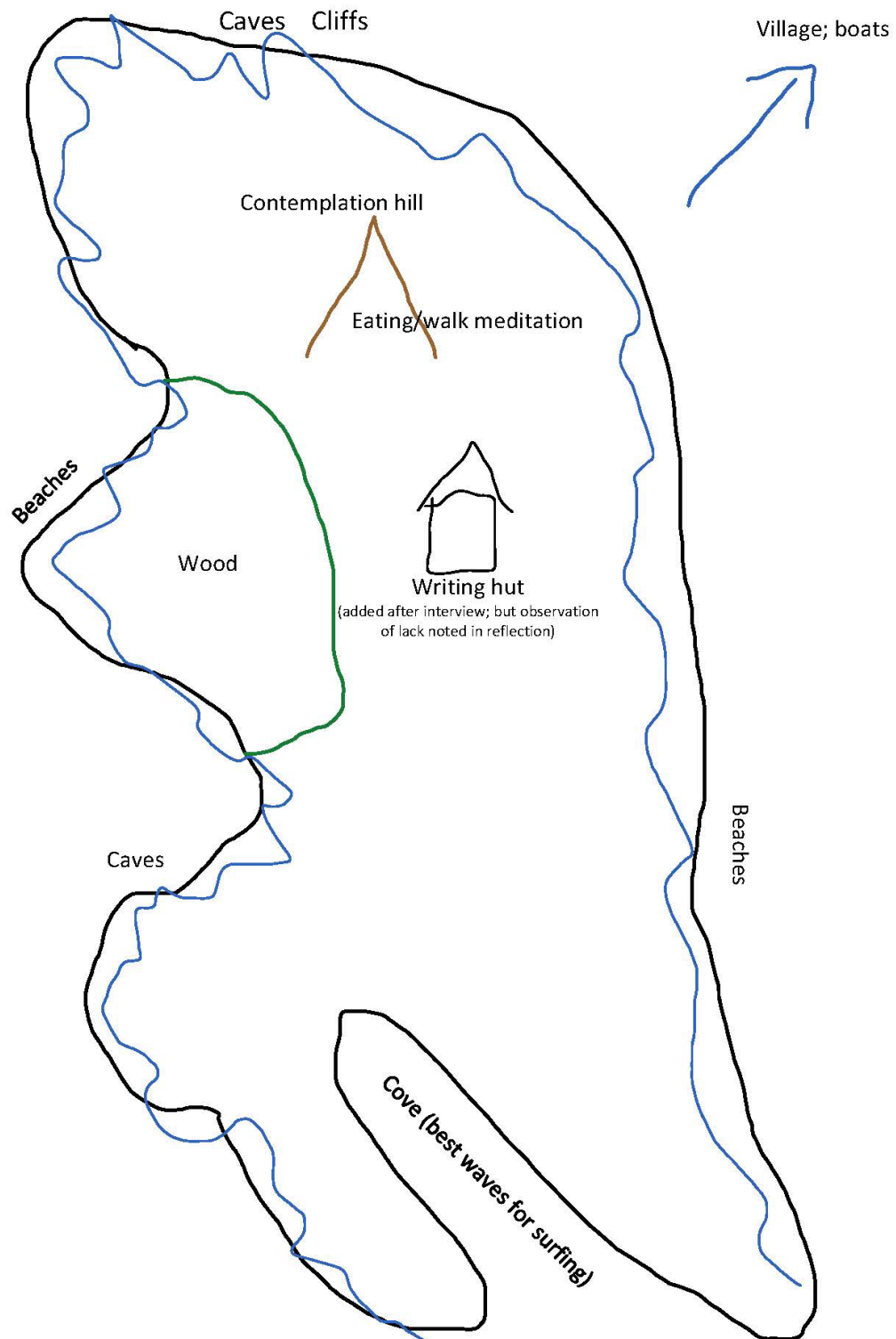
In considering RI, specifically, Ashley defaulted to her disciplinary (Public Governance) position of expressing RI knowledge as content to be learned, rather than behaviours or dispositions to be developed. This suggests that despite her purposeful and thoughtful engagement with RI and attempts to integrate it into her own sphere of influence, there are some habits that fall back to the disciplinary origins, in valuing epistemic rather than social relations. A scenario she shared serves to prove this point. In a case where a student under her co-supervision acted in a way, which Ashley determined was outside the scope of their project and impacted the integrity of the research, the student and lead supervisor took the decision to dismiss Ashley’s concerns regarding the collection of the data and include it in the dissertation. In this case, it is possible that the epistemic relations of the discipline (Public Governance) were foregrounded at the expense of the social relations of the generic field of study, that is, research integrity. It certainly demonstrates that while some actors may be inclined to transcend the epistemic expectations of the discipline and favour the social expectations of research integrity, this is not a widespread trend in Ashley’s space. That is not to say that the discipline of Public Governance does not act with integrity, but rather to say that in this example, epistemic expectations associated with a knowledge specialisation code outweighed the social expectations of the generic field of study (i.e. Research Integrity). This may well be an isolated case and should not be seen as an exemplar or indictment on the discipline.

Ashley further commented (in a general sense, not relating specifically to her space), RI should be taught across the institution, in all research methodology and design courses. But added a reflection that not all researchers would share this view and expressed concern about this, given that they may be in need of a RI intervention. In this reflection, Ashley is observing potential incompatibility with research integrity on an individual level, but also necessity to researchers to know RI content. Again, favouring an interpretation of a knowledge specialisation code over that of a knower.

Themes in interview:

- Practiced/application of disciplinary knowledge
- Generic content in a disciplinary space (cf. Joyce)
- Development of tools/skills to access disciplinary knowledge
- The type of disciplinary practice which is valued for knowledge production and epistemic relations (i.e. value of academic publications over 20+ years of practical experience outside academia, where non-academic publications are not recognised)
- Public Governance as a discipline is ER+; Research Methodologies as a generic teaching space is ER+; RI is SR+ but also a generic. Possibility for compatibility with RI and methodologies as generics, but also tension in the ER vs SR expectations. This would then transfer to the primary discipline.

Sharing Circle Island



Note: Island rendered digitally based on hand-drawn picture emailed to researcher

Participant synopsis

Brook is a “mature” emerging researcher. She holds a PhD in Biological Anthropology and Anatomy and works in the same discipline as her qualifications. She participates in the full range of academic activities from teaching and learning to supervising and researching (both as a principal investigator and a collaborator). While her discipline is based in the Health Sciences, she suggests that it leans more towards a humanities/social sciences space, and this certainly seems to be a plausible argument given the range of different research topics she is engaged in and specialised knowledge she possesses. While she argued for the importance of the social and ‘personable’ researchers, the foundation of the discipline, as presented in the interview, is in a knowledge code (ER+), where epistemic relations hold value, and the attributes/dispositions of the disciplinary actors are less significant.

It is interesting that the discipline is one which allows for a wide range of subject-matter expertise, and this is borne out in the range of collaborations where Brook indicated that she engaged in different projects with different lenses. In other words, depending on what specialised knowledge or expertise the project needed, you would leverage your different areas of knowledge. Going forward this was something that posed a challenge for Brook, driven by deep curiosity, she enjoys the opportunity to collaborate in different ways with a range of other anthropology specialists. But noted that this limited her ability to deepen specific disciplinary epistemic relations, something which she hoped to do in the medium-term. Importantly, Brook also saw an important component of her work as allowing students to grow their own epistemic understanding of the discipline.

She indicated that responsible research practices were part of her core practice as a disciplinary expert. Initially suggesting that a compliance approach was the format that was important (having permits and permissions in place), but then enhancing the compliance approach with principled behaviours and attributes that would enable the research to stand as an example of integrity and one which was respectful of the deceased subjects and their descendants. In this way she has explicitly embedded responsible research practices as a tool to strengthen her research (and her researcher identity) and to demonstrate meaningful community engagement. She acknowledged that this was a deeply personal practice for her, and one which she tried to inculcate into her collaborations and supervision relationships and also that this practice was not necessarily prevalent throughout the discipline – where there were plenty of loopholes (particularly legislatively) and disciplinary actors frequently made use of them. It would be interesting to engage with more actors in the discipline to see whether making use of loopholes (and thus less responsible research practices) was something which others engaged in.

The epistemic relations of the discipline are shown to hold the most value (ER+). Being able to engage collaborators on a social level (being personable) was seen to be important, especially so for Brook, but was not the basis for engagement in the discipline. Being personable and a good collaborator are certainly good characteristics, but the discipline seems driven by epistemic, knowledge, practices with social relations taking less of a priority, i.e., they are relatively weaker (SR-). In engaging with those outside of the discipline (other important stakeholders, like the police), Brook did suggest that there was an emphasis on social relations. However, I would argue that the emphasis was on communicating knowledge effectively, in other words, using the knowledge and skills of the discipline to adjust communication practices, to have social awareness of the situation, but to still convey critical knowledge and information.

While responsible research practices (research integrity and ethics) formed a strong part of her professional identity, Brook indicated a complete dissociation of her personal identity from her professional or researcher identity. Her preference was to keep her personal life separate from her work life. Interestingly, however, it is in times of dissociation (being unplugged from her computer) that she has time to reflect, contemplate and produce knowledge. She highlighted honesty, contemplation, exploration, curiosity, high-level problem solving, accuracy and focus on data quality as values which underpin her research. High-level problem solving sometimes being done in times of reflection and dissociation; bringing together different forms and types of knowledge to tell a transformed story of the past. This transformed story of the past being one of her highest aspirations. In contemplating and demonstrated by her description of her island where others would come to collaborate, we can see that social interaction is a means for Brook to grow and produce knowledge. The purpose of the interactions is to produce knowledge, again pointing to the assertion that Brook is located in a knowledge code (ER+/SR-), where knowledge is valued over the dispositions or behaviours of the actors. Her commitment to responsible research practice is demonstrated in her responsible use of source material (acknowledging its colonial influences and bias, unconscious or otherwise). She suggested that she is reflective in her use of a range of source material and awareness of its legacy is a crucial part of the research and reflection process. The key take away from this was that generating new, transformed knowledge, with a focus on epistemologies has the power to advocate for transformation and a transformed picture of the past, based specifically of revisiting epistemic relations. The values, present on her island, which she noted as an important part of her practice and identity are used as a means to deepen her ability to produce meaningful research and knowledge.

Lastly, Brook has explicitly integrated RI into her own space, often going beyond her understanding of disciplinary expectations. She has undertaken active efforts to integrate and accept RI values, which she

sees as complementary (and important for the production of responsible research) but notes that not all in the discipline might not be inclined towards these practices. There are some topics which have become part of the narrative of research integrity (such as open access or open data) where she sees real concerns and therefore contests. Contesting open access in some cases where the ethical challenges have not been sufficiently addressed is an important part of advocating for responsible, reflective research and part of building a generation of responsible scholars.

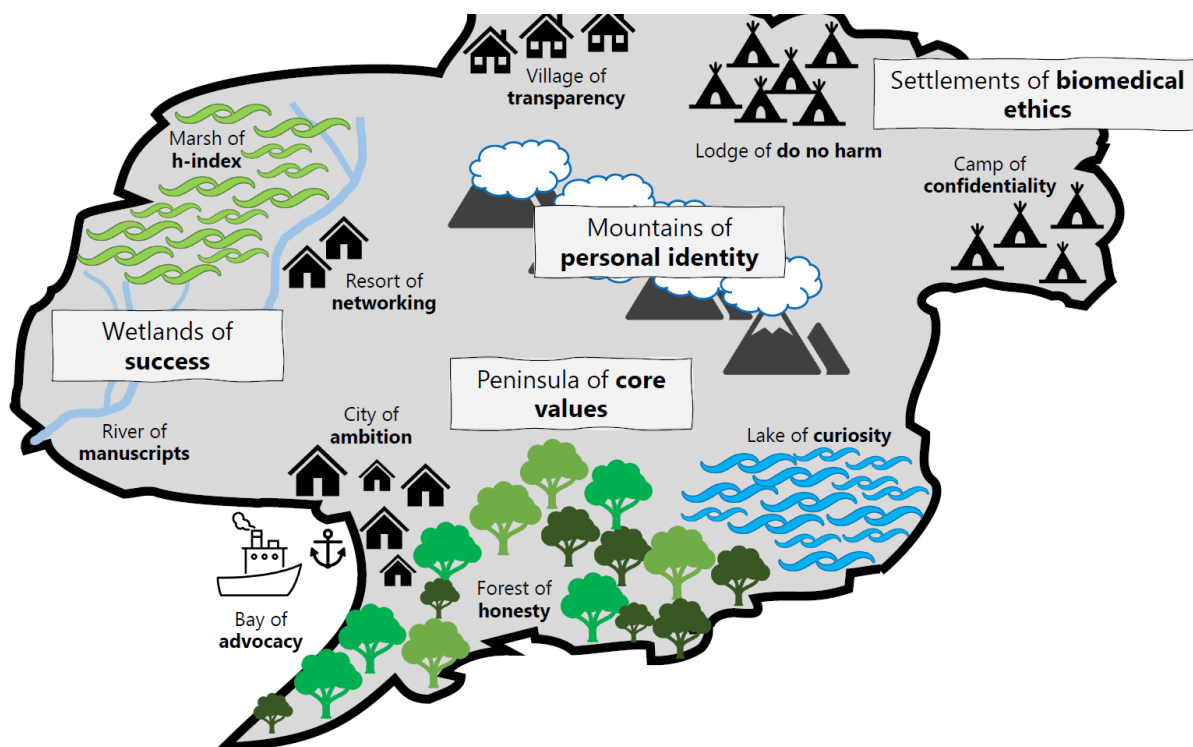
Brook is engaged in a discipline which values knowledge over the attributes of actors. She has a strong internal drive to incorporate responsible research practices into her behaviours and to influence her collaborators and students to do the same. Individually, she represents a researcher who has integrated both responsible research practices and understanding of the importance of compliance processes and therefore sees RI as compatible and an explicit practice. The same may not be the case for all in her discipline.

Themes in interview:

- Value of epistemic relations (knowledge specialisation code) in the discipline
- Social relations (behaviours of actors less valued by the discipline – but not eh participant)
- Practice/application of disciplinary knowledge
- Deepening disciplinary knowledge to be an authority in a specific subject
- Curiosity, collaboration, discussion, reflection, and influence as integral to practice
- Duty to tell a transformed story of the past

E3: Coral

Medical Virology



Participant synopsis

Coral is a young researcher with a doctoral qualification in Medical Virology who is working in the same discipline as her qualification. She is in a soft-funded post and aims to secure a permanent position as a researcher at the university as part of her medium-term goals, in addition to growing her research profile.

Coral operates in a discipline that values epistemic relations (ER+) above all others and views its contribution to the academy as specifically producing knowledge, rather than inducting actors into practices, behaviours, and dispositions. That being said, there are some social practices that are valued by the discipline, but these are framed as supporting the epistemic project, rather than valuing attributes or dispositions. Coral spoke of values which are embedded in her practice as a result of her training in the discipline, these were identified as producing robust, high-quality, excellent, state-of-the-art, reliable data. In this framing it is possible to see that the epistemic project of the discipline is what largely drives progress in the space. Additionally, Coral's suggestion that there was a need for more consistent quality control practices related to data production and review, were aimed at supporting the epistemic project of the discipline. She asserted that while good practice (in the form of the values

identified above) was common throughout the discipline, there were pockets of excellence and that while quality control was common it was not necessarily consistently practiced.

When it came to consideration of research integrity and responsible research practices, it was clear from the discussion and Coral's island map that she saw these as forming part of both her personal and professional (researcher) identities. Responsible practices form part of disciplinary training and therefore enable and support the epistemic project. Responsible practices also act as a means to demonstrate authority within the discipline (a commitment to data quality standards and practices). It should be noted that while some responsible research practices form part of disciplinary training and processes, they are selective as to what they chose to incorporate and it is difficult to expound whether the practices are implicit or explicit, or somewhere in between. Lastly, in applying the disciplinary knowledge of responsible research practices, it tends to lean more to a compliance or check-box approach.

Coral indicated that her personal and researcher identities were well integrated and fed into one another, arguing that the values she sees as important form part of the foundation or basement of her island (the visual representation of her identity). It was also clear that the disciplinary conditioning of actors, with a preference to epistemic relations was a key part of how she conceptualised her identity (speaking regularly of h-index, citations, manuscripts and so on). While the discipline seems to lean towards a selective compliance-based approach to research integrity and ethics, Coral saw it as a more embedded and significant part of her identity and how she chooses to engage with other researchers. This suggests that Coral's engagement with RI is more explicit than that of her discipline, but there were instances in her interview where she did lean more to the compliance approach, as conditioned by the discipline. Personally, she felt that the values of honesty and transparency were most important, and also focussed on ethics, with a biomedical lens. These values occupied a large part of her island and drove much of the conversation, suggesting that while they support the epistemic project, they are, to Coral, more driven by social relations (or perhaps responsibilities). For Coral, being honest (with her sub-themes of objectivity and fairness) and conducting research in a transparent (with her sub-themes of producing robust, reliable, reproducible data) way were behaviours that should support the research. Suggesting that she is, perhaps subconsciously, trying to engage the social in supporting the epistemic relations of the discipline.

It is likely that epistemic relations in the discipline underpin the relationship to/with research integrity as a means to practice or apply knowledge. This is what makes it difficult to plot where on the spectrum of implicit/explicit disciplinary engagement with RI may fall. For Coral, it seems likely that it leans more

into being an explicit practice. Her own personal values potentially allowing space for more purposeful engagement with responsible research practices.

Coral noted that the discipline does have minimum standards for ethical research (again, framed in terms of a compliance-based approach), and that exposure to research integrity training through the ORI enabled more awareness of RI as a topic, but did not necessarily alter her practice (as this was already supported through disciplinary expectations).

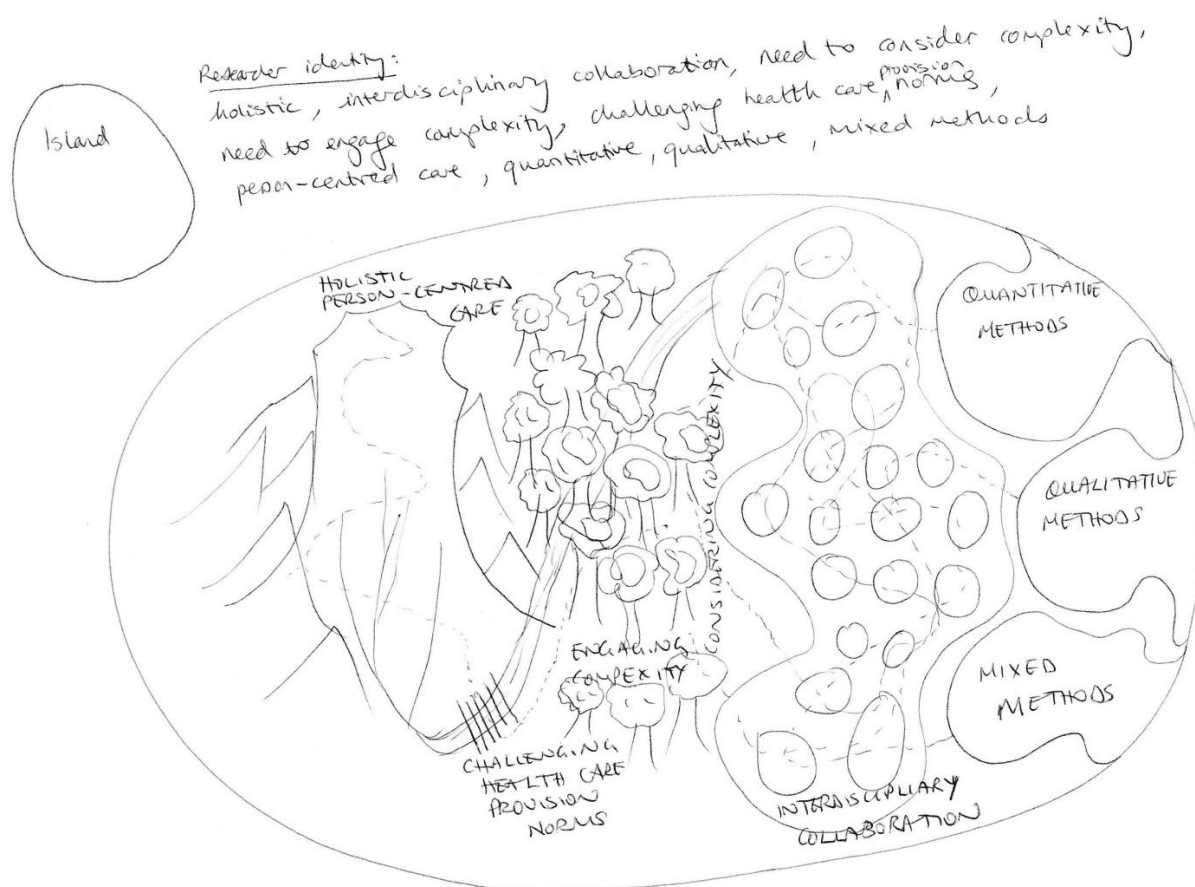
Overall, Coral is located in a discipline which favours epistemic relations (ER++), where approaches to RI are framed through a compliance lens and are implicit practices. Coral, herself, may be more explicit and purposeful due to her own personal traits, but this enabled through the epistemic preferences of the discipline.

Themes in interview:

- Display of knowledge as a legitimating feature (conference presentations, manuscripts etc)
- Application and practice of disciplinary knowledge as the foundation of engagement within the discipline
- Disciplinary preference for knowledge conditions the actors of the discipline
- Personal integration of responsible research practices

E4: Isla

Palliative Care



Participant Synopsis:

Isla is a 'mature' emerging researcher who is a qualified medical doctor with a Master's in Palliative Medicine and is currently pursuing a PhD in Family Medicine (with a focus on Palliative Medicine). She is working in the same discipline in which she holds her qualifications. In her position she has a range of responsibilities which include research and teaching. Her ambition is to have a clinical position which would enable practicing as a palliative health care professional in the community and to combine this with teaching and research. In this sentiment, it is possible to see all elements of Bernstein's pedagogic device at play as each aspect of knowledge production, recontextualisation and reproduction informs other aspects of the work. Currently her work does not involve any clinical duties, only teaching and research. Practicing knowledge in her space is an important part of her disciplinary identity, this is achieved through research (i.e. understanding how to integrate disciplinary knowledge into different spaces, therefore recontextualising and sharing knowledge) or teaching in postgraduate courses.

In the medical field, Isla is working in a region, that is a discipline which is applied or professionally oriented. In her context she understands palliative care not to be its own discipline (describing it as not having its own clinics or wards, as markers of a disciplinary identity) but a collaborative project that requires engagement with other disciplines in order to conduct research and achieve a vision of person-centred care. This suggests weaker framing, in that the control exerted within palliative care is in relation to other disciplinary spaces and weaker classification (at UCT) as the instructional and regulative discourses of the 'discipline' are caught up in the newly established department of Family, Community and Emergency Care, rather than being recognised as a specialty by the HPCSA (by comparison Family Medicine is recognised as its own specialty).

Isla is acting in a space where knowledge, or epistemic relations (ER) hold the most power, but it is possible to see that social relations too hold some sway insofar as they contribute to knowledge production and therefore strengthening of the epistemic project. She practices her knowledge as a leader (or principal investigator) on funded projects and also in more generic spaces such as, for example, the disciplinary research methodologies course. This course is one space where people engaged in the 'discipline' can develop skills to access knowledge in the 'discipline', akin to an induction into 'disciplinary' practices and in so doing, strengthening epistemic relations (ER↑) in a range of spaces. She sees development of new knowers in the 'discipline' as key to its growth and therefore, implicitly, seeks to strengthen framing (F↑) through making pedagogic practices visible or explicit. She sees this practice as contributing to improved patient outcomes, through empowering others in the knowledge production space (focus on ER). The focus on production of knowledge (ER) is emphasised here, over any particular behaviours (social relations; SR) which may be preferred. Additional evidence in the preference of epistemic relations over social ones is visible in the description of two research assistants, who are described first and foremost by the qualifications they hold, variously a degree in Psychology with a Master's in Palliative Medicine and a Social Worker with a Master's in Public Health. These descriptions favour the qualifications of the people as markers of legitimacy in the first instance. However, it is also possible here to see that social relations do play an important (although less so) role in the discipline. Isla described that the research assistants, with specific qualifications were better equipped to conduct the research as they were able to build relationships and maintain social relations with participants, in order to strengthen the research/production of knowledge. This suggests that we are engaged in an elite specialisation code (ER+/SR+) where both epistemic relations and social relations are valued, with epistemic being more valued (ER++), but social relations still holding value (SR+). This is especially important in the space of knowledge production and the aim of person-centred care.

The values that Isla highlights as underpinning her researcher identity (reliability, honesty, good stewardship of research, trustworthiness, quality of data) are consistent with research integrity values and behaviours. What is interesting, is that, in answering this question Isla first provided answers in relation to social relations (SR) and then followed values related to epistemic relations. This supports the previous assertion that ER is particularly strong in her space, but that social relations are the key to supporting the epistemic ones. In order to accomplish the goal of person-centred care one must apply knowledge, but this knowledge can only be gained through a combination of social and epistemic practices. The social relations again come to the fore when Isla describes the critical nature of both interdisciplinarity and collaboration in her research and teaching. In considering these themes, Isla reflected largely on the importance of social relations (i.e. how one behaves or the dispositions of the actors) in a space which primarily values knowledge. What is particularly interesting in this case is the tension that arises in the approach of the 'discipline' of Palliative Medicine. Isla suggested that the approach is person-centred (SR+) rather than disease-centred (ER+); and while on the surface the importance of SR+ comes through it is fully underpinned by the importance of ER++ to support the practicing of the social relations. The balance of social and epistemic relations is one which Isla seems to confront on a regular basis, and the people-centred approach, where social relations are key, is wholly underpinned by the epistemic relations of the 'discipline'. Isla falls back on knowledge as a safe space from which to take engagements further.

In considering research integrity (RI), specifically, Isla admitted that she is not as deeply engaged as she would like to be, commenting on the importance of the practices. However, the values which surfaced as a matter of course, which she highlighted as part of her researcher identity (and were implicit on her island) are complementary to RI values. She does acknowledge that there is space in her scope of work to deepen her engagement with RI. However, it is worth noting that she already implicitly practices and values many responsible research practices. When reflecting on the specific values of the Singapore Statement these behaviours came across as more social practices and dispositions which were achieved through knowledge practices. This is consistent with the relationship that her 'discipline' has with epistemic relations and social relations in general, and therefore we could argue that RI as a field of study is compatible with Palliative Medicine. There is no conscious attempt to contest or reject RI values, but those values are more implicitly integrated than purposefully considered on a day-to-day basis. That is not to say that Isla is not conscious of the importance of these implicit values, she indicated that they formed an integral part of her researcher identity. The fact that they were not overtly included on her island map serves to add to the notion that, for Isla, RI is implicit. While noting the importance of generic training and generic values which could be applied across a range of disciplines, Isla did

comment that some contextualised training would be of value. This would be a way to make it more real or tangible. Therefore, offering an opportunity for an implicit practice to be made more explicit.

Themes in interview:

- Application/practicing of disciplinary knowledge in different spaces
- Respecting the role that social relations play in the production of epistemologies (knowledge) and people/individuals.
- Knowledge production important to the discipline and its practice
- Practicing of social relations important in an ER heavy space, as it supports interdisciplinarity and collaboration
- As a region (or applied profession) there is an added layer of consideration. Those engaged in the discipline need to be able to engage in the discipline with a strong epistemic foundation (ER++) but also be able to engage appropriately socially (SR+) with the public and with peers.
- RI integration is implicit for Isla, and she suggests that applies to the discipline. She also suggests that making RI more explicit would be of value.

E5: Jean

German Studies



Participant synopsis

Jean is a young emerging researcher. She holds a doctoral qualification in German Studies and is currently working in the same discipline. Her prior qualifications were also based in Linguistics, and she brings that knowledge and framing with her to her engagement with/in German Studies. Jean is extremely self-aware and understands what she does and does not bring to the practice of the German Studies discipline. She has also purposefully crafted her early career activities to enable herself to grow and thrive in a systematic and thoughtful way.

When relating specifically to her discipline she identified that disciplinary actors saw personal attributes holding the most value, referring the "being German" or "mother-tongue speakers" on several occasions. This suggests that the discipline is locating itself as a knower code, where social relations (SR) or the attributes of actors are seen as holding the most power. This is also noticeable in the social aspects of learning a language and using personal attributes to enhance a perception of epistemic competence. However, as we progressed, it became apparent that while SR were critical as a legitimating tool it was also critical that they were underpinned by epistemic competence, that is, having and using

specialised knowledge (which came in the form of being able to competently speak the language and engage with other academics or researchers). This leads to the conclusion that while SR is strong in the discipline, epistemic relations hold at least an equal position (therefore ER+/SR+), suggesting an elite specialisation code. This theme was prominent throughout the interview and also emerged in the creative exercise. In some instances, epistemic value preceded valuing social relations (for example teaching students, where access to knowledge – how the language works – would facilitate access to social dispositions or attributes) while in other cases this was inverted.

It is also worth noting that as a discipline, as with most disciplines, there are niches within it. In this case the separation generally runs along the lines of literary scholars and language acquisition scholars. This split also comes with its own set of values and principles. Jean suggested that literary scholars tend to lean more into a knowledge code (possessing and applying specialised knowledge), while the focus of language acquisition scholars is located more in an elite code (developing epistemic relations and social relations in students thus empowering them with both knowledge and, behaviours and attributes). Interestingly, Jean seems to prefer operating in a knower code where behaviours and attributes are valued more prominently. The discipline on the other hand regularly pulls her into an elite space. This pull is something that she does not contest but is something which does on occasion cause self-doubt or anxiety. She is growing to be more comfortable in the discipline, in her confidence of her knowledge and attributes.

Jean readily spoke of producing responsible research which was carefully thought out and planned. This careful planning was seen as a means to confront ethical challenges and to meet the needs of gatekeepers. On the surface, this might suggest that she leans to a compliance-based approach to integrity and ethics but warrants further interrogation. She is aware of some research integrity topics such as the role of gatekeeper permissions, problematic publication practices (low quality and predatory journals), the value of full reporting of data and research instruments, and the role of ethics committees in strengthening research. Much of this knowledge was developed out of engagement with peers or professional experience, rather than an institutional researcher development programme. She suggested that research integrity was an implicit practice and saw no need for contest or rejection. Jean also spoke of research needing to have a purpose, being transformative, fairness, compassion, organisation, accessibility, transparency, and critical engagement. These values are well aligned with RI values and practices, which may explain why Jean felt their practice was implicit. They came to her naturally and were a key part of her research process. Critically, and contrary to Jean's suggestion of the implicit nature of her own RI practice, she felt that developing ethics applications and project plans was an opportunity to think critically about research projects and to develop them responsibly. To me, this

suggests that her own practice of RI is far more explicit than she believes. The fact that they were not developed as a discrete feature on her island may support her position that the practice is implicit, they were practices and behaviours that were consciously included or applied. Perhaps Jean falls somewhere in between, on the spectrum of explicit versus implicit engagement with the field RI.

It is not clear whether practices like Jean's extend into the discipline as a whole. One might argue that a lack of disciplinary code of conduct or practice suggests that Jean's practice is unusual. However, without further engagement with others active in the discipline this would be an unfair conclusion to draw at this stage. It is also important to note that many literary scholars do not directly engage with human participants, but rather with texts, suggesting that the disciplinary landscape may not naturally have space for RI. But this is a question for future research.

Jean suggested that her personal and professional/researcher identities were well aligned, and that this alignment enabled and facilitated her growth overall. This is also supported by the importance of the social relations in the discipline. Key to her identity was having a 'home' in a higher education institution, which would, to some degree, influence the type of development and growth that is possible.

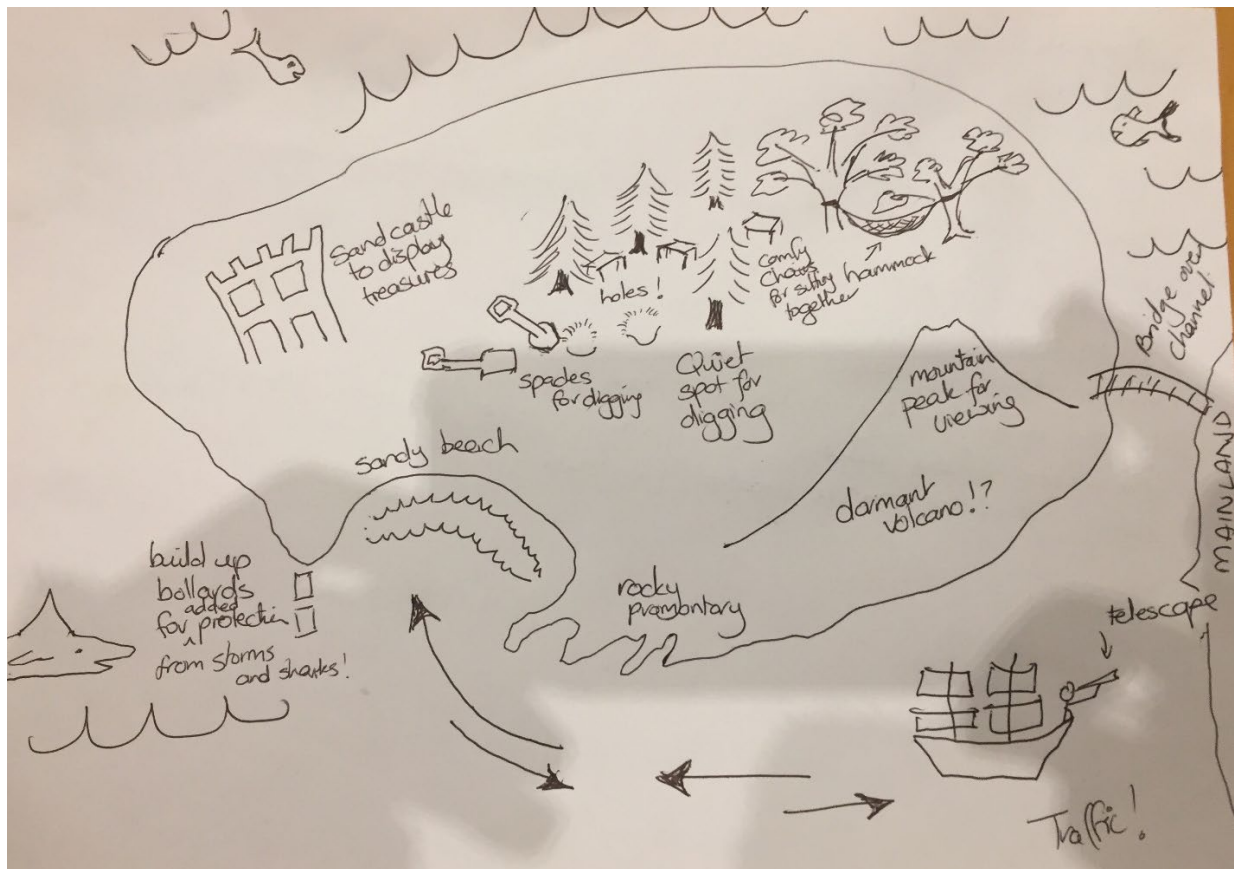
Overall, Jean is in a discipline which values both epistemic relations and social relations, an elite specialisation code. While she argues that RI is implicit in her practice, I would suggest that her active integration of the values into her own practice of the discipline suggests otherwise. To her the values and practices of RI are compatible, but the extent to which this applies across the discipline is somewhat more challenging to uncover without further research. The discipline, in valuing epistemic relations and social relations does create a space that enables acceptance of RI in some instances, but again the extent of (and need for) integration is less clear cut.

Themes in interview:

- Leveraging social position of actors to deepen epistemic engagement
- Combination of specialised knowledge (language) and application in a way which conforms to certain social behaviours
- Discipline as a whole may have different specialisation codes depending on your orientation within the discipline
- Difference in personal engagement with RI versus disciplinary practices
- Role of peers in personal/professional development
- Ethics as a path to responsible research practices

E6: Joyce

Education and Development in the Faculty of Engineering and the Built Environment



Participant synopsis

Joyce is a "mature" researcher, engaged in the Emerging Researcher Programme. She is "emerging" in the sense that she is still working towards a PhD in her own discipline and therefore argues that the academic community does not fully regard her as an authority. On the other hand, she holds a range of social science and humanities qualifications (Honours in Philosophy and Master's in Education & Development) that have enabled and supported her work in the Faculty of Engineering and the Built Environment (EBE) for more than a decade. Joyce finds herself in a position of tension in her professional space. She yearns for opportunities to engage in and produce research, in a collaborative and social setting but, her current role is confined to teaching and learning. This means that her own ambitions related to contributing to research and therefore knowledge production are limited by her position. This being said, she is taking up opportunities to contribute to knowledge recontextualisation and reproduction by contributing to different publications as a lead author or collaborator on different Engineering Education texts. She indicated that she felt she was recognised outside of the institution as an expert in her field, but that the same recognition was not necessarily present within the institution. Joyce works in a space which values the possession of specialised knowledge as the principal

legitimizing attribute, a knowledge code (ER+), while she herself (personally and based on her disciplinary background) leans more to behaviours and attributes as factors which are valued, therefore a knower code (SR+). This results in the tensions raised above; her space of practice is governed by an ER code and values fundamentally different attributes to her own, strong internal SR, social values, and practices. In her work she attempts to reframe ethics and integrity in a creative way, which leverages the social nature of the field of study to incorporate it into knowledge practices. The success of this is a long-term project and one which needs its own research to determine if it is a meaningful approach, and it is not the purpose of this current study. But it is worth noting that Joyce is explicitly trying to disrupt the strong epistemic relations of the engineering space by reframing her own teaching in a social, behavioural, way-of-being approach. To disrupt the “compliance” approach by leveraging the epistemic relations of the engineering discipline as a means to socialise and produce students who are not only strong epistemically, but who also display markers demonstrating a value towards behaviours and dispositions. This approach is visible at various stages of her teaching, which prepares students for research and engaging engineering as a profession (some examples include developing an academic integrity course based within EBE and bringing in engineering scholars to supplement her own teaching relating to ethics – so that people with the same disciplinary lens as the students are communicating with them in a meaningful language. She spoke about students learning the difference between a practical solution to a problem (based on epistemic relations) versus a responsible solution to a problem (based on the behavioural attributes expected of an ethical researcher). She bumps up against a different disciplinary lens as a matter of course in her daily work.

Ethics and integrity are strongly incorporated into Joyce’s professional and personal identities, actively and explicitly. Prior engagement with the Office of Research Integrity (ORI) development opportunities deepened her personal engagement and impacted her own way of working, through development of a language of engagement and connection to a community of like-minded scholars. While integrity was explicitly practiced and integrated into her identity, it is important to note that the disciplinary space in which she operates is one where integrity is largely viewed through a “compliance” lens, and therefore treated like a box to be ticked, rather than behaviours to embed and attributes to display. She spoke of research integrity in a way which suggests that she views it through an SR+ lens, a knower code. This is compatible with her own personal values and her educational background, and therefore compatible to her way of being.

Joyce spoke of the values of collaboration, criticality or critical enquiry, social justice orientation, inclusivity, reflection, and open communication being important to her professionally. These values lean more towards social dispositions. But she also spoke of appropriate research methodologies and

technical tools being important to the research process, displaying the underlying ER+ nature of the space she is embedded in. To Joyce, the ER+ of the space enables her own SR+ preferences. This was clearly demonstrated multiple times during the interview and embedded in her island map. The metaphors she used to describe her researcher identity were often developed to support creating knowledge in an ER+ space through an SR+ lens (remembering that Joyce's role is that of a teacher, rather than specifically a researcher). There are instances where the ER+ nature of her spaces comes through into her own metaphors and practice. This was borne out in metaphors where technical competence in one element underpinned the creation of new knowledge in another space. She also acknowledged that the discipline's approach to ethics and integrity (as a compliance-driven approach) was one which may not affect behavioural outcomes of students and indicated that she is pressing the faculty for deeper engagement with RI/RE and to expect more of people (implying both researchers and students). She saw the role of RI training as key in this effort and indicated that both generic training and discipline-specific content should be available to make responsible research practices more meaningful. Her closing thought related to the responsibility of equipping students to become researchers in a way that would enable integrity and ethical behaviour, again leaning to her comfort code, a knower code.

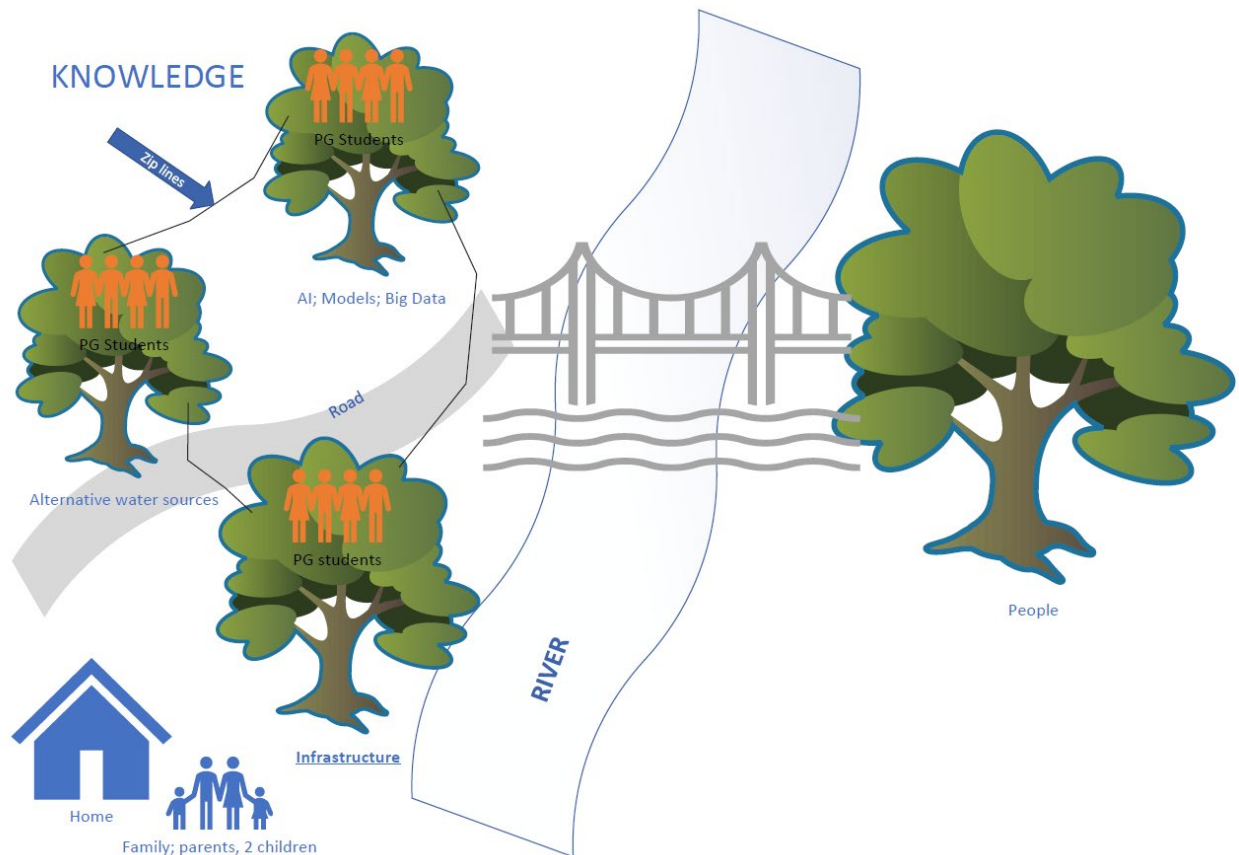
It is clear that there is great tension in Joyce's space. She is located in a discipline which values knowledge above all else, a strong knowledge code (ER+). But she herself is more inclined to social relations and a specific set of attitudes, behaviours, and dispositions. She tries to influence her space, to deepen engagement with research integrity where she can and has had some successes. The fundamentally different knowledge practices affect her ability to encourage the growth of knowers, but her strong sense of professional identity help her to reconcile and continue to advocate for strengthening practices.

Themes in interview:

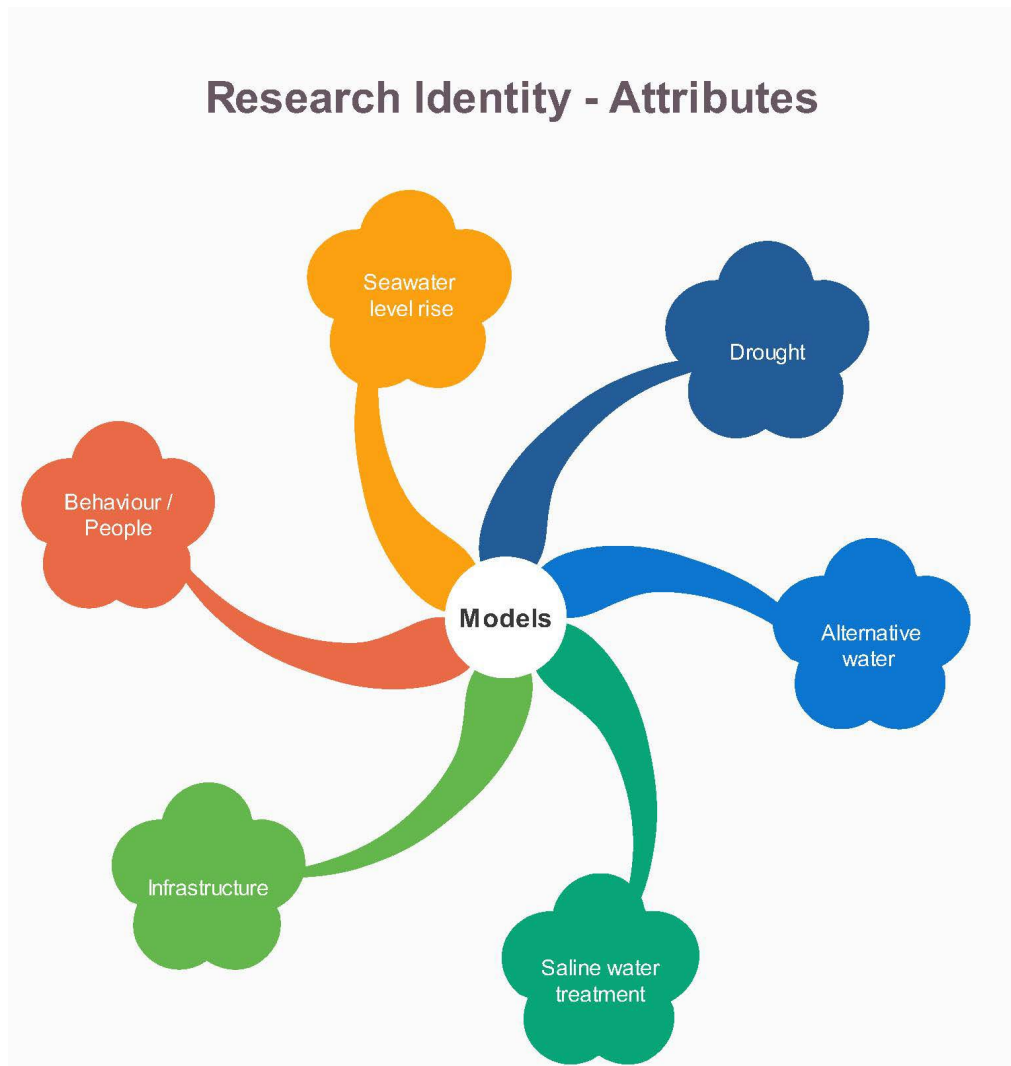
- Generic content in a disciplinary space (cf. Ashley)
- One discipline (SR+) operating within the bounds of another discipline (ER+)
- Tension in the research/professional space
 - Desire to engage in research, does not formally form part of her appointment
- Markers of legitimacy (internal versus external)
- Explicit, purposeful personal engagement with RI and attempts to influence space and make an implicit practice, explicit

E7: Lerato

Civil Engineering



Note: Island rendered digitally based on map developed during participant interview.



Note: The above diagram was submitted by the participant ahead of the interview. This participant struggled with the creative exercise. In her transcript this diagram is referred to as the 'trees diagram'.

Participant synopsis

Lerato is a young emerging researcher who holds a Master's qualification in Civil Engineering and is working towards a PhD in the same discipline. She is also currently employed in the same discipline. She described her PhD research as moving into water engineering, which is a sub-discipline of Civil Engineering. Lerato is still grappling with elements of her own identity. She joined academia from industry, thus reminding us that, in general, Engineering disciplines are regions, or applied professions that can face outward from the academic world and are often professionally oriented. She described her current practice as built on epistemic foundations and industry experience and growing through learning as she completes her PhD.

Lerato is based in a strong knowledge code, where epistemic relations (ER++) define engagement, and the attributes or dispositions of the actors are not regarded as important. Interestingly, Lerato acknowledges that often the epistemic practices of the discipline are trumped by social behaviours in other spaces (for example related to delivering water services to communities). She noted on multiple occasions the importance of community engagement in developing solutions to challenges industry and academia are trying to resolve. However, community engagement was framed in the sense of understanding how water systems would be used and how cultural or religious practices received the potential solution. Community engagement was framed as a means to tap into social knowledge to enhance the epistemic project and outcomes of the discipline. In many ways this theme also emerged in engagement with collaborators, students, and other stakeholders: leveraging social knowledge to enhance epistemic relations.

Lerato grapples with elements of her own identity, wanting to deepen her disciplinary knowledge, but also confidently asserting that she is a legitimate authority in the space, for the mere fact of holding a certain qualification. Asserting that the degree grooms those in the discipline to be empowered as legitimate authorities, while suggesting that her goal was to deepen her disciplinary depth in an attempt to resolve uncertainties related to her professional identity was an interesting contradiction. Regarding values which were important to her research she identified curiosity, openness to co-creation and co-learning and an awareness of her overbearing nature. Implicitly, we also spoke about concerns related to inequity and lack of inclusivity when it came to water infrastructure, suggesting that equity and inclusivity are also important values underpinning her researcher identity. As an interesting juxtaposition, Lerato indicated that her disciplinary knowledge and professional experience influences her personal choices such as where to live and work, meaning that she carries her epistemic practices with her into her personal identity.

As someone who is firmly based in a knowledge specialisation code, where epistemic relations are exceptionally strong, the creative, reflective exercise presented some challenges for Lerato. The exercise was, of course, developed out of a different specialisation code (knower code), using a different research paradigm and therefore this represented a distinct code shift, or even clash, for Lerato. While she indulged the exercise and we did eventually find our way to something which could be described as an island map, she was clearly uncomfortable when she tried to complete the exercise on her own. To me this speaks to the overwhelming influence of the epistemic relations in the discipline, where social relations, by Lerato's own admission, are rarely considered. When considering some interventions to empower communities, Lerato spoke of developing cultural education around water. This cultural education could, on the surface, be positioned as more closely aligned with a knower code, but in reality,

the cultural education interventions would be based on recontextualising and reproducing specialised knowledge to influence behavioural outcomes. At its core the intervention is conceptualised as an epistemic one, to service the social awareness toward water, and potentially influence behaviours, but this influence comes through greater epistemic awareness. While Lerato spoke many times about wanting to bring social elements in to her practice and that of the discipline, it was largely in service of growing epistemic, rather than social relations.

Lerato indicated that there is a code of conduct that Engineers are required to follow. This approach seems in line with a compliance approach, rather than an RRP approach. The disciplinary engagement with RI seems to be surface-level, by Lerato's own admission. She described RI in terms of behaviours (doing things), suggesting a recognition that RI is a field of study which is more inclined to a knower code or social relations. This acknowledgement of the different knowledge codes at play (even if it is at a subconscious level) may account for the compliance-based approach to integrity and ethics. It also results in some level of tension, suggesting that ethics is avoiding certain actions (for example corruption in infrastructure spaces), actions which are informed by knowing what the right things to do is, or which rules you should follow. Lerato suggested that the discipline (Engineering, in general) could benefit from deeper engagement with RI, noting that surface-level engagement was really only a means to improve knowledge outcomes (that is, learning from mistakes). While integrity and ethics are foregrounded in the code of conduct, and ethics is taught as a module prior to graduation, the practice of responsible research is implicit and the associated discourses are hidden, in Lerato's eyes. She argued that there should be better, more frequent and sustained integration of RI teaching in the engineering curriculum, and in a way which was complementary of the regulative discourse (that is matching knowledge code to knowledge code and avoiding a code clash). She argued against a compliance-based approach but did not expound on what an RCR approach might look like, beyond there being real consequences if not completed in the appropriate time (again, shifting back to a compliance-approach).

Lerato noted that the softer side in her was the part that was pushing for deeper social engagement. While this seems to be critical for the discipline to produce knowledge which is meaningful and used, it is all in service of the epistemic project, as the disciplinary space provides for. Research integrity values were implicit on her island map and appear to be implicit in the discipline, or only dealt with at a surface-level in service of specialised disciplinary knowledge. While there is a specialisation code clash, the discipline does at least have a compliance-based approach to RI, and do offer it space in their curriculum, even if it is in service of the epistemic project.

Themes in interview:

- Application of disciplinary knowledge
- Wanting to leverage social knowledge to improve disciplinary knowledge
- RI at surface level, possibly due to code clash
- Application of disciplinary knowledge in different contexts to solve different problems
- Personal growth impacted by invisible disciplinary discourses
- Knowledge/qualifications as conferring legitimacy and/or authority

Appendix F: Informed consent forms

Participants



Mrs Paula Saner

Masters of Education in Higher Education Studies Student

E-mail: paula.saner@uct.ac.za

Phone: 082 893 3010

INFORMED CONSENT FORM

Research project title:

How do emerging researchers, based at UCT, engage with research integrity values in their disciplinary contexts?

I understand that my participation is voluntary, and that confidentiality will be maintained. I understand that I can withdraw from this study at any time and that my data will be destroyed.

Risks to participants

The research is intended to understand engagement of emerging researchers with RI values and practices within their disciplines. As such the study carries minimal risks to participants. If the interview and creative exercise processes raise issues for participants that need professional guidance and support, participants will be referred to UCT's Employee Health and Wellness Programme (http://www.hr.uct.ac.za/hr/benefits/org_health/counselling).

Data management, storage and sharing

UCT's Intellectual Property Policy stipulates that research data belongs to the institution. The data for this study will not be 'open access' data and will be available, in its raw form, only to the researcher and her supervisor. The data may be used in publications emanating from the research. Data will be used in its pseudonymised format in order to protect the identity of the participants.

Data will be stored on institutional servers, behind UCT's sign-on services and will not be shared on an open access repository. Any requests for access to the data will be considered on a case-by-case basis, by the researcher, in consultation with the School of Education Research Ethics committee. If permitted, data will not be shared in an identifiable format.

Name	
Signature	
Date	
Preferred pseudonym	

I consent to the following	Yes	No
To take place pre-interview		
Being interviewed by the researcher		
Having the interview recorded (if in-person, audio recording only; if remotely, screen and voice recording) and transcribed		
To take place post-interview		
Submitting my creative exercise and reflective commentary as a data artefact		
Reviewing the interview transcription for accuracy		
Reviewing draft interpretations and analysis of the data for clarity and meaning		

ORI Director



Mrs Paula Saner

Masters of Education in Higher Education Studies Student

E-mail: paula.saner@uct.ac.za

Phone: 082 893 3010

INFORMED CONSENT FORM

Research project title:

How do emerging researchers, based at UCT, engage with research integrity values in their disciplinary contexts?

I understand that my participation is voluntary, and that confidentiality will be maintained. The purpose of this interview is to contextualise the role of the Office of Research Integrity (ORI) within the institution. The ORI will be referred to in general terms, rather than by identifying particular staff members or respondents. However, as the Director of the ORI, I understand that it might be possible for me to be identified.

Risks to participants

The research is intended to understand engagement of emerging researchers with RI values and practices within their disciplines. As such the study carries minimal risks to participants. If the process raises issues for participants that need professional guidance and support, participants will be referred to UCT's Employee Health and Wellness Programme (http://www.hr.uct.ac.za/hr/benefits/org_health/counselling).

Data management, storage and sharing

UCT's Intellectual Property Policy stipulates that research data belongs to the institution. The data for this study will not be 'open access' data and will be available, in its raw form, only to the researcher and her supervisor. The data may be used in publications emanating from the research. Data from emerging researchers in the study will be used in a pseudonymised format in order to protect the identity of the participants.

Data will be stored on institutional servers, behind UCT's sign-on services and will not be shared on an open access repository. Any requests for access to the data will be considered on a case-by-case basis, by the researcher, in consultation with the School of Education Research Ethics committee. If permitted, data will not be shared in an identifiable format.

Name	
Signature	
Date	

I consent to the following	Yes	No
To take place pre-interview		
Being interviewed by the researcher		
Having the interview recorded (if in-person, audio recording only; if remotely, screen and voice recording) and transcribed		
To take place post-interview		
Reviewing the interview transcription for accuracy		
Reviewing draft interpretations and analysis of the data for clarity and meaning		