DISCIPLINARY KINGDOMS: NAVIGATING THE POLITICS OF RESEARCH PHILOSOPHY IN THE INFORMATION SYSTEMS

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ABSTRACT
In this position paper, I discuss the intellectual politics of research philosophy in the field of Information Systems (IS). I make particular reference to the higher education landscape of South Africa, and attempt to trace personal and scholarly encounters with what I deem to be ‘paradigmatic thinking’. The aim of the ensuing discussion is to deepen the understanding of the politics of paradigms, as instantiated in IS research teaching and philosophy. This discussion attempts to broaden existing discourse by considering the university of technology as an emerging player in IS research philosophy. In particular, I consider paradigmatic thinking as the emergence of Disciplinary Kingdoms within which academics navigate the sacred grounds of philosophy, and rule over these with epistemological authority. I discuss these dynamics critically, and argue for conceptual-critical undertakings in the research philosophy of IS that encourage autonomy, agency, and self-reflection.

Keywords: disciplinarity; research philosophy; paradigm; Information Systems; higher education.

1. INTRODUCTION, AIM AND SIGNIFICANCE
In this position piece, I discuss the politics of research philosophy in the higher education landscape, particularly in South Africa as a developing country, though not solely limited to this context. The primary ‘data’ that informs this piece stems from personal experiences in a university of technology, from the associated literature, and from a series of in-field reflections. Here I trace both personal and scholarly encounters with what I deem to be ‘paradigmatic thinking’ in a particular discipline, namely the Information Systems (IS). The aim of the ensuing discussion will be to deepen our understanding of the politics of paradigms, as instantiated in IS research teaching and philosophy. This is by no means a comprehensive reflection, but an attempt to broaden existing discourse by considering the university of technology as an emerging player in IS research philosophy.

For clarity, I distinguish here between paradigmatic thinking (or politics) in research philosophy and in that of the ivory tower, the latter referring to academic seclusionism. In research philosophy, paradigmatic thinking concerns the ring-fencing of research philosophies under their respective epistemologies, methodologies, and consequently, disciplines. The former, as I will explore, also becomes an instance of the latter. I deem paradigmatic thinking, in particular as evidenced in the conceptual development and practical application of research philosophy, as the emergence of Disciplinary Kingdoms. It is within such Kingdoms that we navigate the sacred grounds of our disciplinary philosophy, and rule over these with universal and structured authority. From subsequent reflections, we take this rulership not to be one of many, but one of few – an oligarchy of philosophy.

I move not, however, towards a democratic ideal, which calls for multidisciplinarity and the equal partaking of different stakeholders. Notwithstanding the significance of such ideals, I rather argue for conceptual-critical undertakings in the research philosophy of IS that encourage autonomy, agency, and self-reflection. This is not easily achieved in a higher education landscape that is marked by legacies of seclusion, of resource scarcity, and of intellectual brevity. South Africa’s new universities of technology have in some ways
inherited such notions. This is too complex a system to explore in a single attempt, however, and the following passages seek to highlight my experiences in a faculty of informatics; an amalgamated institution of sorts, struggling for its identity in a rapidly evolving intellectual culture. To give some context to these encounters, I first discuss some of the prevailing views and reflections from the vast body of IS literature.

2. **Reflections from Literature**

2.1 **The Theme of Paradigms in Information Systems**

The contentious theme of paradigms has long been discussed and debated in the sciences, both physical and social. It is at this stage useful to note that there are various – often contradicting – conceptualisations of ‘paradigm’ that also go beyond the philosophy of science. Perhaps the most recognised explanation stems from the seminal work of Thomas Kuhn (1962). Kuhn studied the history of science, and regarded the role of scientific revolutions in instituting new paradigms as “universally recognised scientific achievements that, for a time, provide model problems and solutions for a community of practitioners” (1962: 10). In this way, the paradigm represents a set of (epistemological) assumptions and resulting practices that determines what questions we can ask of the world. When these assumptions are shared and generally accepted (therefore, dominant), they tend to define a scientific discipline at a certain point in time (Babbie and Mouton, 2001; Maxwell, 2005).

Kuhn specifically contends that the majority of scientific work is done as part of what he calls ‘normal science’; and “normal science happens when the paradigm for that science is well established” (Kroeze, 2013: 46). Constituted in normal science, paradigms inform its adherents of what is legitimate research, of which questions to ask, of which assumptions to make, of which hypotheses are acceptable, and of how to present research results (ibid.).

In their pioneering work on naturalistic inquiry, Lincoln and Guba (1985: 15) present a different view of paradigms. According to the naturalistic interpretation, the paradigm is a ‘worldview’, and represents a distillation of what we think about the world, but cannot prove. Our actions in the world, including those we take as inquirers, cannot occur without reference to those paradigms: “as we think, so do we act” (ibid.). They maintain, thus, that while paradigms are enabling, they are also constraining:

A paradigm is a world view, a general perspective, a way of breaking down the complexity of the real world. As such, paradigms are deeply embedded in the socialization of adherents and practitioners: paradigms tell them what is important, legitimate, and reasonable. Paradigms are also normative, telling the practitioner what to do without the necessity of long existential or epistemological consideration. But it is this aspect of paradigms that constitutes both their strength and their weakness – their strength in that it makes action possible, their weakness in that the very reason for action is hidden in the unquestioned assumptions of the paradigm (Lincoln and Guba, 1985: 15).

Historically, naturalistic inquirers (as social scientists) share a non-positivist or social constructionist view, which may itself represent a (meta) paradigm. In this way, the use of the term paradigm is not reflective of the Kuhnian view, in which the paradigm is not considered appropriate for the social sciences. Kuhn observed that social scientific concepts are never mutually agreed or shared and that there are consequently no paradigms in the social sciences.

If Information Systems can be regarded as a social science, it can be argued that paradigms have taken non-Kuhnian forms as philosophies or epistemologies. In this regard, it
is worthwhile to consider the three most influential ‘accepted traditions’ in the field: positivism, interpretivism (or antipositivism/constructivism) and critical realism (or postpositivism). Each perspective lends itself to multiple meanings and interpretations, and there is much contention regarding these. Broadly, positivism refers to a philosophical system or framework that only recognises (universal) facts and observable, empirical phenomena (Kroeze, 2012: 2). Within this framework, reality is explored as a concrete, given or absolute entity to be understood objectively (ibid.). Adherents of interpretivism generally hold that there is no single, universal reality but that there exist multiple realities, of which persons are the internal constructors. Reality, therefore, is subject to many interpretations and configurations; these can be explored, understood, and respected by emphasising idiographic, subjective meaning (as opposed to nomothetic fact) (see Walsham, 1995). Critical realism is a form of postpositivism in which reality is seen as being imperfectly and probabilistically apprehendable, and in which research findings are value-mediated (Guba and Lincoln, 1994). This framework accepts the relativism of knowledge as socially and historically conditioned, but establishes a realist view of being (Mingers and Willcocks, 2004: 91).

Through each of the aforementioned perspectives have emerged several traditions and theories that have characterised social science in its respective disciplines (not least IS)\(^1\). And although the IS field has reached maturity, in both its underlying philosophies and social-scientific approaches, its foundations are historically linked to positivism:

Most of the research in the field of Information Systems appears to be guided by one set of philosophical assumptions, those of positivism. Such paradigm unity could prove problematic as it might stymie alternative conceptions of problems in the IS field (Goles and Hirschheim, 2000: 249).

This claim of paradigm unity resonates in the modern conception and application of Information Systems research, and instances of positivism abound in the field (see Hirschheim and Klein, 2012). This is despite what Gregor (2005: 6) refers to as a “lingering death”, in which positivism is no longer a “defensible position in discussions of theory or epistemology in Information Systems”. And while many have tried to discredit positivism in the philosophy of sciences, it remains a strong ‘logic in use’, with its underlying realism being an important ‘ontology in use’ (Stahl, 2008: 55). Other perspectives have entered the IS paradigm fray, the most prominent of these being interpretivism and critical research. The former is notably described and advanced by Walsham (1995).

The prevalence of interpretivism also be speaks the growing prominence of critical research in Information Systems, and more recently, critical social Information Systems research. This is defined as research that challenges established social conditions, institutions, and oppressive forms of control, often enabled and supported by IS, which prevent the realisation of free societies and organisations (Cecez-Kecmanovic, 2011; Stahl, 2011). Despite concerns of being a “missing paradigm” in the IS discipline, socially critical research poses questions of ontology through which scholars deliberate the constitutive nature of social relationships and artefacts (Klein, 2009). Critically informed research thus becomes an

\(^1\) In positivism, we observe the traditions of Comte, the father of positivism (1798-1857), epistemological realism (Durkheim, 1858-1917), logical positivism (as espoused by the Vienna Circle from 1925), and postpositivism (Kuhn being a central proponent since 1962). In interpretivism, we observe the traditions of hermeneutics (Dilthey, 1833-1911), symbolic interactionism (Blumer, 1900-1987) phenomenology (Schutz, 1899-1959), the analytical tradition (Winch, 1926-1997), and ethnomethodology (Garfinkel, 1917-2011). And finally, in critical realism we observe the traditions of emancipatory science (Habermas, 1929-), critical social science (Fay, 1975-), and critical feminism (Smith, 1926-), among others.
important contributor to the maturing field of IS as a means of both problematising and reconciling contrasting approaches in research philosophy (ibid.).

Finally, in the various disciplines of the social sciences, there is also a familiar and vast history of ‘paradigmatic thought/thinking’, not least in the Information Systems. Paradigmatic thought has to do with the firm adherence or ‘non-questioning’ of the philosophical foundations of the research, which have historically led to paradigm wars (Datta, 1994). In IS, this aspect has been addressed in several notable publications that have emphasised the “need for more open and nuanced ways to study and analyse IS complexities” (Goldkuhl, 2012: 1; Feldman and Orlikowski, 2011; Orlikowski and Iacono, 2001; Orlikowski and Barley, 2001; Marshall et al., 2005; Avgerou, 2008; Avgerou, 2000; Robey et al., 2008). Further to this work, IS can be regarded as an increasingly transdisciplinary field, that moves across and beyond narrow disciplinary boundaries (Kroeze and Van Zyl, 2014). But even in transdisciplinary IS research, the theme of paradigms can often lead to intellectual politics.

In the modern IS field, paradigm debates have in some respects been quelled by taxonomies of alternative approaches (Galliers, 2003), the rise of multiparadigm perspectives (Kyriakidou and Venters, 2007), and pragmatism (Marshall et al., 2005). Pragmatism especially is on the rise as a fundamental approach in IS (Goldkuhl, 2012) and this will be discussed towards the conclusion of this paper. Despite these developments, however, the paradigm as a unified mechanism of thought lives on in the Information Systems. This is not generally problematic, but in the pedagogy of research philosophy, paradigmic thought can become a convenient inhibitor of critical and introspective thinking.

2.2 A Typology of Paradigms

It is useful at this point to mention another influential perspective in the development of paradigms (later adopted in Information Systems). In a seminal work, Burrell and Morgan (1979) introduced a typology of “paradigms” for the analysis of social and organisational theory (see Figure 1). By identifying fundamentally different assumptions concerning the nature of social science and the nature of society, they arrived at a matrix composed of four research quadrants, which they regard as different paradigms (adapted from Goles and Hirschheim, 2000: 253):

- **Radical humanist**: seeks radical change and emancipation, and stresses the role that different social and organisational forces play in understanding change;
- **Radical structuralist**: emphasises the need to overthrow or transcend the limitations placed on existing social and organisational arrangements;
- **Interpretive**: seeks explanation within the realm of individual consciousness and subjectivity, and within the socially constructed ambit of human relations;
- **Functionalist**: concerned with providing explanations of the status quo, social order, social integration, consensus, need satisfaction, and rational choice.
Each of the four paradigms contains meta-theoretical assumptions that “underwrite a frame of reference, mode of theorising and modus operandi of the social theorists who operate within them” (Burrell and Morgan, 1979: 23). The use of the term paradigm is intended here to describe a “commonality of perspective” which binds the work of theorists together. The four paradigms taken together provide a map for negotiating a subject area, which offers a frame of epistemological reference (ibid.). To this end, the authors add a caveat,

The four paradigms are mutually exclusive. They offer alternative views of social reality, and to understand the nature of all four is to understand four different views of society. They offer different ways of seeing. A synthesis is not possible, since in their pure forms they are contradictory, being based on at least one set of opposing meta-theoretical assumptions (ibid.: 25).

This notion of paradigm incommensurability has been, for the model’s vehement critics, a severe intellectual shortcoming, not least in the Information Systems. Proponents of incommensurability in general, or of this model in particular, hold that paradigms (and in some cases the theories and methodologies contained within them) are fundamentally antithetical. This is due to the distinct ontological, epistemological and methodological assumptions that undergird each paradigm. Opponents of this view argue that such assumptions are indeed compatible and that paradigm boundaries are (or should be) permeable (Goles and Hirschheim, 2000; Jackson and Carter, 1991)

2 Goles and Hirschheim (2000) use the example of symbolic interactionism and hermeneutics, rooted in different quadrants, but which inevitably overlap in their epistemological underpinnings.

In spite of such critique, this paradigmatic framework would later have much significance for Information Systems. In 1989, Hirschheim and Klein discussed the Burrell-Morgan model as a deepened approach for theorising about the nature, purpose and practice of information systems development. The identification and uncovering of paradigms, they maintained, would permit the generation of creative IS solutions to proceed in a more conscious and systematic way (ibid.). Over the next two decades, the paradigmatic framing of Burrell-Morgan has been widely and critically examined in the IS field (see Hirschheim and Klein, 2012).
Ultimately, it is not the purpose here to debate the merits of these traditions but to observe them within the paradigmatic and oft political realm of the Information Systems. A history of the field betrays its dominant, functionalist orthodoxy. This was intensified by the social milieu of organisation studies in the 1980s, a quest for legitimacy in view of more established fields and unpalatable paradigm alternatives (Goles and Hirschheim, 2000). And with the emergence of opposing non-positivist/non-realist and critical perspectives, the paradigm continues to exist as form of epistemology in the Information Systems (Stahl, 2008; Hirschheim and Klein, 2012). As I will discuss henceforth, siding perhaps with the school of pragmatism, such an epistemology (in its uniformity) becomes untenable in the contemporary undertakings of the field.

3. REFLECTIONS FROM PRACTICE

We may unpack some of the aforementioned reflections by looking to practical and empirical instantiations of paradigmatic thinking, particularly in the higher education landscape. While one may delve into the literature of instructional models, modes of learning, or tertiary knowledge production, I attend to this matter by unpacking some of my experiences in a faculty of informatics at a university of technology in South Africa. I do not discuss the political history or mandates of this particular university in depth, even though this may help to contextualise the emerging role of paradigmatic thought. I do, however, look to historical and current aspects in the teaching of a postgraduate research philosophy module, some of which are indicative of paradigmatic thinking, and that may have important consequences for educational development.

Importantly, this university is one of the further education bastions of a newly democratic South Africa, which is in many respects a developing country. This context is characterised by lesser, deficient access to Information Systems education, as well as poorer educational infrastructure compared to high-income countries (or to historically high-income universities in the country itself). While South Africa is indeed an emerging or newly industrialised economy as per the BRICS classification, the higher/further education landscape in the country remains deeply imbalanced in respect of infrastructure, resources, staffing, skill levels, and fees.

4. UNIVERSITIES OF TECHNOLOGY IN SOUTH AFRICA

In 2001, the South African Ministry of Education announced the National Plan on Higher Education, seeking to eradicate the binary divide between universities and technikons. This called for a “loosening of boundaries” (2001: 48) between institutional types and for increased uniformity, which saw the merger of institutions and the formation of universities of technology. I was based in a faculty of ‘informatics and design’ at one such university for nearly three years, and am currently based there on a part-time basis. The university and faculty I refer to here has historically struggled for an ‘academic identity’ in the context of an institutional merger. Through this unification, formerly technical and industry-related subject domains (e.g. in design, multimedia, and information technology) were to be reconciled with applied and basic research. This instilled, in some respects, a “differentiation” of cultures (see Van Vught, 2008) in which formerly opposing and exclusive domains were to be refigured in relation to a post-apartheid milieu of equity and diversity.

Institutional differentiation was indeed politically driven, and sought to “promote equity of access and fair chances of success to all who are seeking to realise their potential through higher education, while eradicating all forms of unfair discrimination and advancing redress for past inequalities” (Ministry of Education, 2001: 6). Following this democratic ethos, universities of technology also became vehicles of development and social redress,
effected through the provision of student aid and of institutional resources to deal with the learning needs of under-prepared and historically disadvantaged students (ibid.).

4.1 Streamlining Research Philosophy

My experiences in one such institution have revealed many of the practices that manifest within a context of differentiated identity. In our faculty, my colleagues and I had the primary goal to develop and grow a culture of research philosophy, in which we encouraged the undertaking of basic and applied academic research. This was in part due to the merging of cultures, both scholarly and technical, but also due to worrying student performance rates, not least at postgraduate level. At this level, the student population had exceeded faculty resources, evident in the overwhelming number of new registrations, insufficient (and under-qualified) administrative and academic staff, and unsatisfactory retention and throughput rates. A concrete research culture, it was believed, would help stimulate engagement and participation within this volatile environment.

In this context, we endeavoured to develop the necessary scaffolding to support students in their postgraduate activities, and to fulfil the university objective of enhancing research and knowledge production. In the Department of Information Technology\(^3\), where I was teaching at the time, a committee of academics began to restructure the postgraduate course offering. This was mostly organically and informally done according to the Burrell and Morgan typology (1979) referenced earlier. This typology, in particular as advanced by Roode (1993), was believed to offer students a fundamental recipe in understanding research philosophy. And given the ease-of-use and supposed pedagogic significance of this approach, it would later be promulgated at faculty level.

Notably, however, this was not officially drafted in any faculty mandate (at least, not to my knowledge). The fundamental elements of Burrell-Morgan was espoused, though, at every other research philosophy workshop, session, presentation, and class in which I was present. The Burrell-Morgan model seemed to become the educative norm in the IT Department and the wider faculty. The four-quadrant framework, with its subjective and objective tensions, would indeed offer a “commonality of perspective” in Burrell and Morgan’s terms, and would help students identify and negotiate a subject area. The use of this typology would even lead to an “instant research question generator” to streamline the research design process (see Cronjé, 2013). Roode too envisioned this approach as an “excellent” means of preparing graduate students for their research work:

From a pedagogical point of view, the implications are far-reaching, not only in terms of the new approach to research which should be absorbed by graduate students, but, more importantly, in terms of the changed assumptions with which the student, as system developer, will have to make sense about the nature of human organisations, the nature of the design task, and what will be expected of them. The process-based research framework makes it possible to teach students these fundamentally new assumptions and roles (Roode, 1993).

\(^3\) Information Systems formed part of the respective subject areas and disciplinary expertise in the Department. For purposes of this paper, therefore, I refer to the IS discipline as it more broadly encapsulates aspects of information technology, computing, as well as the social and organisational contexts of information systems (Oates, 2006). The Faculty in which I was based, however, included various departments and subjects, not limited to IS.
The process-based approach mentioned here is structured along a framework of mutually exclusive research questions, aligned to the meta-theoretical assumptions of the Burrell-Morgan typology (see Figure 2). For Roode, this would mean a departure from the (then) prevailing empirical-positivist paradigm, in that different questions are based on assumptions from other domains (1993). This stands in contrast to Hirschheim and Klein’s (1989: 1213) claim that paradigms are “deeply rooted in the web of common-sense beliefs and background knowledge”. Roode suggests, rather, that the researcher or student “should explicitly utilise the different paradigms and the accompanying assumptions to view the problem at hand deliberately from different perspectives” (1993). In this way, a research problem can be understood and addressed in a holistic manner.

| What is? (radical, critical inquiry) | Research problem  
Teaching situation  
IS development | Why is? (explanatory, causal inquiry) |
|-----------------------------------|-------------------------------------------------|
| How does?  \( \rightarrow \) (direct, reality-based inquiry) | Research problem  
Teaching situation  
IS development | Why is? (explanatory, causal inquiry) |
| How should? (normative, prescriptive, evaluative inquiry) | Research problem  
Teaching situation  
IS development | Why is? (explanatory, causal inquiry) |

Figure 2. Generic research questions, adapted from Roode (1993). Subsequent research by Cronjé (2013) maps these questions onto the Burrell-Morgan quadrants (see Figure 3).

5. **The Steady Rise of Disciplinary Kingdoms**

Roode’s framework seems to be a pragmatic attempt at investigating a research problem from various perspectives. At the time, this may have been the preferred alternative to dominant functionalist and positivist approaches in (teaching) Information Systems. The intellectual merits of this approach lie in its uncomplicated structuring of a research undertaking. For postgraduate students, formerly unfamiliar with the rigours of social scientific research, this does seem to offer a reliable and systematic means of engaging the problem landscape. Yet, herein we observe two problems that are carefully veiled under the remarkable pragmatism of the Burrell-Morgan typology: incommensurability and prescriptive pedagogy. These form the basis of what I call ‘disciplinary kingdoms’.

Firstly, Roode’s adaptation invites the student to probe a problem from different perspectives, but with a caveat: research questions (probing different aspects) are mutually exclusive. This is because, recalling an earlier proviso by Burrell and Morgan (1979: 25), paradigms are contradictory in their pure forms. Paradigms are “alternatives, in the sense that one can operate in different paradigms sequentially over time”, but “mutually exclusive, in the-sense that one cannot operate in more than one paradigm at any given point in time, since in accepting the assumptions of one, we defy the assumptions of all the other” (ibid., emphasis added). Roode is however careful to add that the researcher does not universally accept or reject assumptions associated to particular questions – he merely enquires about “different facets of the research problem to obtain as much information about it as possible” (1993).

While this approach explores the research problem from different perspectives, the four sets of questions (how does, what is, why is, and how should) are essentially and unavoidably rooted in their corresponding paradigms. This prevents cross-fertilised inquiries that pose how, what, why and how questions simultaneously, complementarily, and critically without self-imposed paradigmatic boundaries. Such an insular model essentially prohibits
students from posing “why questions” in exploratory/subjectivist inquiries, or similarly, “what questions” in an evaluative manner. Here, Roode’s approach does not avoid the cardinal problem of incommensurability: his proposed research questions are ultimately irreconcilable, since they are still based on opposing meta-theoretical assumptions. Consequently, to recall Burrell and Morgan, a “synthesis is not possible” (1979: 25).

I was concerned at the superficiality of this approach for teaching and learning purposes, particularly as espoused and actively encouraged by scholars in our department and faculty. At closer inspection, this approach somehow traverses the paradigmatic limitations of the four-pronged framework by abstracting and reducing a set of generic questions from each quadrant, and presenting these as alternative modes of inquiry. Paradoxically, this dictates a set of paradigm-specific generic questions, which even as a pragmatist attempt, fails to diversify the research problem effectively. Research problems are still ring-fenced according to four sets of assumptions without any critical appreciation of the deeper nuances of each. This was the first worrying sign that an IT/IS disciplinary kingdom – with a rulership of few, and an influence over many – was being created in our department. And through this kingdom, a neat, well-rounded framework, in which mutual alternatives are ultimately not possible, is propagated as the ‘normal science’.

The second related problem that is observed here is that of prescription, or more generally, authoritative recommendation. In our department, the posing of ring-fenced questions is prescribed to postgraduate students, rather than teaching them how to learn, study and think critically in relation to research material. This results in, contrary to Roode’s intentions, an over-reliance on a predetermined structure and an under-reliance on reflexive application. The Burrell-Morgan-Roode ‘formula’ is indeed widely promulgated at a postgraduate level. This is coupled with an ABC Instant Research Question Generator, which is presented to assist “relatively inexperienced researchers to reach an initial understanding of what it is that they wish to do” (Cronjé, 2013: 19). The ABC generator is rooted in the Burrell-Morgan typology and is prescribed (or recommended) to postgraduate students, following four key steps (ibid.):

1) Students locate their objective or subjective beliefs:

   On the horizontal level students are asked to position themselves in terms of their belief of the role of scientific knowledge and the role of technology. They have to choose between a subjective or an objective approach.

2) Students refine this by distilling Burrell and Morgan’s two concepts of society:

   To refine this they should consider the envisaged answer of their research question. Are they hoping for one definite, final objective answer—such as “yes/no” or “75.09%”, or are they hoping for a more complicated subjective answer such as “it depends...”? Burrell and Morgan’s concepts of a Society of Radical Change and a Society of Regulation are reduced to a conceptualisation of the role of the research in society.

3) Students decide on their eventual research output:

   Students have to decide if their eventual research output will be a primarily abstract picture of what a situation looks like (that requires radical change) or a set of rules or heuristics that show how something works, and may therefore be the first steps towards regulation.
4) Students determine their ontological and epistemological beliefs and know the type of research they need to do:

In this way students are able very quickly to plot their beliefs in the scientific nature of the truth as Subjective/Objective and their conceptualisation of society as Abstract/Concrete. Once they have plotted themselves, we automatically know the answers that they are looking for.

This formula presents an extended version of Roode’s earlier model:

![Research aims and research questions according to the ABC Instant Research Question Generator (Cronjé, 2013: 20).](image)

> Figure 3. Research aims and research questions according to the ABC Instant Research Question Generator (Cronjé, 2013: 20).

Inevitably, this results in an instantiation of neatly ring-fenced questions, as noted formerly: anti-positivists explore or explain (direct, radical inquiry), whereas positivists describe and develop (explanatory and evaluative inquiry). This somehow reduces the established relationships between metatheories (metascience), methodological paradigms, and the real world, and neglects important nuances in the rich traditions of positivism and realism, critical research, phenomenology, and participatory action research. Are we in any of these traditions prohibited from posing certain questions due to them not according with our inherent paradigms? Do positivists merely describe or develop, or do they also explain or explore? Do categorical anti-positivists only explore and explain and not describe or develop? Are such paradigmatic categories even useful for constructionists who recognise multiple interpretations, realities and meanings (idiographic inquiry) against general, universal law (nomothetic inquiry)?

These questions are not easily answered, and the abovementioned model further complicates the matter of teaching research philosophy in the social and information sciences. Ultimately, this model can be a good point of departure, but fails to unpack the diversity of research designs that students may select – for example, exploratory, descriptive, causal, evaluative, predictive, historical, meta-analytic, conceptual, or normative (see Babbie and Mouton, 2001). The student is left with little choice but to position him/herself within a binary or dualistic grid that prescribes a mode of inquiry. This constitutes the second key aspect of the disciplinary kingdom that gradually emerged within our department and faculty: the instantiation of Burrell-Morgan became a cursory and dogmatic paradigm in which students were narrowly taught four research possibilities. As a general guideline, this may
well suffice, but in the education of inexperienced research minds, I remain highly sceptical of such models, especially if void of any introspection and critical reflection.

6. **INVADED KINGDOMS**

6.1 Toward Autonomy and Self-Reflexivity

In these examples of ‘instant research’, we observe the underpinnings of what I argue to be disciplinary kingdoms. The metaphor of the ‘kingdom’ reminds us of a rulership of sorts, in which a core group of scholars take sole ownership and accountability of the subject matter, promote it as normal science, and attempt to dismiss counter positions through both intellectual authority and appeals to utilitarianism (e.g. that the model is “easy to understand and use”). By using the image or metaphor of the ‘discipline’, I argue that the broader field of the Information Systems is implicated, and more importantly, its research philosophy, and how it is taught in our universities of technology.

The disciplinary kingdom as encountered in my own experience has two prominent facets: on the one side, disciplinary boundaries are reinforced through incommensurable paradigms. On the other, I observed the worrying trend of prescriptive teaching, in which students of Information Systems are guided along a supposedly utilitarian path. The combination of these elements does not bode well for IS research philosophy, both in its education and in its theoretical development. Paradoxically, Roode offered the four-quadrant approach as an excellent means of preparing graduate students. This approach, in his view, is “in stark contrast to the typical situation where courses in research methodology impart to the unwitting student a fixed methodology for doing empirical positivist research” (1993). Roode is seriously doubtful “about the wisdom of utilising such a simplistic one-dimensional approach to research” (ibid.). I do not need to labour on the irony here.

The politics of research philosophy, at least in my own experience, are thus revealed and build toward new and rigid disciplinary strongholds. IS research is increasingly ring-fenced for the purposes of straightforward instruction and straightforward understanding. This has the twin consequence of keeping disciplinary boundaries intact (by not questioning them), and of reducing the actual research process (through its simplification). Although the intention here (in a particular university of technology context) is to make research more accessible for novice scholars, the opposite is achieved: IS research philosophy is rule-bound, formulaic, and cursory. That we even need an instant question generator is alarming, for, as Newman (1999: 122) classically argued, “a University is, according to the usual designation, an Alma Mater, knowing her children one by one, not a foundry, or a mint, or a treadmill”.

A corollary to this principle is that higher education (even in a South African context) should seek out and develop the unique aspirations, talents and potentialities of its students (Bowen, 1997: 37). It should not prescribe generic, “one-size-fits-all” models. It is unclear whether new universities of technology somehow transcend or reshape this notion of individuality. Rather, what we have thus far observed indicates the tendency to streamline IS research philosophy to cater for inexperienced, ill resourced and under-prepared students (and staff?). And although one could recognise the volatile socio-economic and educational backgrounds of such a population, a mechanistic and pre-programmed framework is not ideal. What can be done, however, to eradicate such instances of boundary making? What can be done to “invade” disciplinary kingdoms?

To build on the aforementioned principle of individuality, one ideal of higher education is in its ability to grow and develop *autonomous* students (see Babaee et al., 2013). This somewhat tenuous practice encourages self-directed and -regulated learning in which the student acts with intellectual independence. If reinforced through facilitative as opposed to authoritative teaching (or instruction), self-driven learning may offer a superior alternative to externally motivated and dependent learning. This may be fostered through personalised
learning environments, in which learners actualise their research using open-ended tools and materials (Dabbagh and Kitsantas, 2012). The combination of these elements presents a possible alternative to incorporate formal and informal learning in the higher education landscape (ibid.).

While it is not the intention here to debate the merits of didactic approaches, the instantiation of disciplinary kingdoms (not least in the Information Systems) remains problematic. Similarly, the notion of independent and self-actualised learning is tempting as an ‘a-structural’ alternative, but one that is so often elusive in practice. As an age-old ethnographic custom, self-reflexivity is perhaps a means to identify and negotiate instances of boundary making and -breaking. In the study of Information Systems, particularly in analyses of social phenomena, self-reflexivity may offer a useful point of inquiry. In the practice of what Krauss and Turpin (2013: 2) term “critical reflexivity”, the student-practitioner is able to uncover, interpret and articulate important nuances and ambiguities from the field of study. Following this practice, we give necessary attention to the “complex webs of determination within which we think and act” (Couldry, 2003: 24).

Self-reflection is seen here as a form of internal conversation. In so doing, “we adopt both the subjective stance (when we say ‘I’) and the objective stance (this is ‘me’, my social role or character), being able to reflect on our own self as if it were an object” (Burkitt, 2012: 465). This allows the researcher to navigate complex paradigms in the subjective/interpretive and objective/positivist realms. The self-determined value of critical, introspective research is thus acknowledged: for Krauss and Turpin, it leads to emancipation of the researcher, and for Couldry, it gives rise to agency. While recognising these boundary-spanning factors, I also advocate self-reflexivity in Burkitt’s personal, emotional sense. This is because, in reflexive dialogue, feelings and emotions are not just attendants to reflexivity; “they are the basis and motive for reflexive thought” (Burkitt, 2012: 469).

6.2 The Role of Theory and Value
The aforementioned practices suggest ways in which prevailing disciplinary kingdoms may be invaded or reimagined. Despite such renewed ‘thinking’ and ‘doing’ of IS research in higher education, however, we are left with a threefold problem: 1) how do we philosophise about the Information Systems discipline, 2) how do we theorise about IS phenomena, and 3) what should we do with the knowledge gained? As I have shown, although the ‘paradigm’ can present a structured and legitimate means to design and conduct research, its manifestation as self-bounded (unquestioning) disciplines is problematic. As an extension of autonomy and self-reflexive studentship, then, we should look to re-examine the intellectual tensions that give shape to the IS field.

It is encouraged, firstly, that IS students conduct a reflexive initial reading of research philosophy. This should ideally be a dialogical review of the literature, and through which students may explore and unpack the various philosophical assumptions that underpin IS research. Boell and Ceecez-Kecmanovic (2014) propose a hermeneutic approach for IS researchers, by which they argue that the literature review is a fundamentally “intellectual pursuit, an understanding process that involves reading, critical engagement, argument development, and writing” (2014: 261). Such a framework may guide higher education students in reaching clarity on some of the fundamental concepts in the philosophy of sciences.

Furthermore, I would encourage postgraduate IS students to engage with matters of theory and value. As a point of departure, I am reminded of Gregor (2005, 2006), who argues for an integrated typology of theorising Information Systems. This distinguishes five interrelated types of theory that offer a conceptual basis for novice researchers (adapted from Gregor 2005: 10-11):
Type I. Theory for analysing and describing: Descriptive theory says ‘what is’ and is the basis for all other types of theory. Description and specification of constructs in theories of this type are needed, as are descriptive frameworks that specify and classify the phenomena of interest in a theoretical domain.

Type II. Theory for understanding: This type of theory says how and why something occurs. Theory from interpretive approaches can be used as sensitising devices that allow greater insights into familiar situations.

Type III. Theory for predicting: Predictive theories say what will be, given the presence of certain conditions. These theories give predictive power without necessarily having explanatory power.

Type IV. Theory for explaining and predicting: This type of theory says what is, how, why, and what will be. It is the type of theory commonly found in the ‘scientific’ perspective.

Type V. Theory for design and action: Design theory is the prescriptive type of theory that gives principles for the construction of a tool or artefact to meet a set of meta-requirements. Design theory is informed by, and can inform, theory for explaining and predicting.

This taxonomy classifies Information Systems theories with respect to the manner in which four central goals are addressed: analysis, explanation, prediction, and prescription (Gregor, 2006: 611). While paradigms are not theories, Gregor’s typology corresponds to the basic research questions that stem from each of Burrell and Morgan’s four paradigms, with the major exception that theory types are not mutually exclusive. To negotiate and address paradigm limitations, for Gregor, it is necessary to reflect on the complex interrelationships among the different types of theory, as well as on possible convergences. This builds toward encompassing or grand theories that incorporate multiple and transdisciplinary perspectives (ibid.). Moreover, this calls for novice researchers to generate appropriate theory as problem-based constructions, and not to depart from predetermined and simplistic ontological viewpoints (2006: 634). Theory therefore guides the paradigm, and not the other way around (although this can have several philosophical implications).

Finally, in science of technology studies, some attention for value (axiology) is needed. Therefore, what should one do with the knowledge gained? What is the (societal, developmental) value of IS research? What role does the values of the researcher play in the outcome? These are especially important considerations in respect of Gregor’s 5th theory type, namely a theory for design and action. Indeed, many of the students in our faculty aim to conduct interventionist research in various areas of business, health, education, and the environment; that is, studies that result in the development of technological artefacts, experiments, prototypes, and services. It is likely that this type of research will have a tangible effect on reality; therefore, students should recognise, study and discuss its impact and potential value for both the Information Systems field and society more broadly.

6.3 The Clarion Call for Pragmatism
From the aforementioned, we establish that the philosophical assumptions that underpin scientific paradigms are not commensurable (see Stahl, 2008). Such a belief builds on Aristotle’s axiom of the excluded third – tertium non datur. This is a basic tenet of our
scientific system, which states that logical propositions must be true or false, and cannot be so simultaneously. In IS research, this argument requires that paradigms, if rooted in strong ontological assumptions, are not reconcilable and therefore mutually exclusive. We can say, for example, “that a researcher cannot follow a positivist and an interpretivist research approach at the same time” (Stahl, 2008: 58). This does not mean that the researcher is confined to either approach, however. An analogous conclusion is that an IS researcher can choose a positivist paradigm that is not realist, or a non-positivist paradigm that is not interpretivist (ibid.).

This argument is generally insoluble and has, in some ways, been superseded by trans-paradigmatic perspectives. Goles and Hirschheim (2000) have long argued for an “end to the paradigm wars”, signified by the rise of pragmatism. Pragmatists are neither positivists nor anti-positivists, but regard the acquisition of knowledge “as a continuum, rather than as two opposing and mutually exclusive poles of objectivity and subjectivity” (2000: 261). In this way, the pragmatist can select the appropriate methodology for a particular research question, which can also take the form of a mixed method approach (ibid.). Gregor’s (2005, 2006) earlier typology is an example of pragmatist research, driven primarily by problem-based constructions and central theory goals.

Pragmatism offers a series of implications for Information Systems research. Its paradigmatic framework is only loosely defined and the research is driven by interest, value, and relevance:

We use the methods that work for us, nothing more and nothing less. We are not wedded to these methods, but to the insights they can uncover and the understandings they can afford us. We use them until they no longer provide benefit, and then we either switch methods or move on to other topics… (King and Applegate, 1997: 28).

Although pragmatism could be a useful point of departure in any basic research endeavour, I would still encourage novice researchers to familiarise themselves with aspects that concern the nature of reality and knowledge. Specifically, research questions and theory types need to be contextualised within a broader conceptual scope. The researcher should ideally reflect on his or her ontological and epistemological views to deduce a theory of knowledge: “How can I understand the subjective/particular or objective/universal world?” It is through a deepened engagement with such aspects that the research purpose (i.e. analysis, explanation, prediction, and prescription) is recognised, motivated and clarified.

7. CONCLUSION
I have attempted to position the role and influence of disciplinary kingdoms in the teaching of IS research philosophy in higher education. This inquiry is limited to one university of technology context in South Africa, and to a single field of study. Other types of kingdoms may yet prevail in and beyond the Information Systems, and future research will need to address these. I maintain in conclusion that such kingdoms are not conducive to the self-actualisation of students in higher education. This especially pertains to less resourced or disadvantaged students, who have to overcome additional educational challenges. If students are prescribed or guided along bounded ways of thinking, how will they be able to unpack research problems in any deepened, nuanced and critically informed sense? As for the alternatives of introspection, of self-direction, and of autonomy – these are generally elusive as practical measures. Future work may look to provide more rigorous means of conducting philosophically informed research in the Information Systems field.
8. REFERENCES


